

UC-NRLF



\$B 313 226

DRILL REGULATIONS
FOR
MOUNTAIN ARTILLERY
(PROVISIONAL)
UNITED STATES ARMY

1908

LIBRARY
OF THE
UNIVERSITY OF CALIFORNIA.

GIFT OF

U.S. War dept.

Class

U.S. War Department :: Office of the Chief of Staff

DRILL REGULATIONS

FOR

MOUNTAIN ARTILLERY

(PROVISIONAL)

UNITED STATES ARMY

1908



WASHINGTON :: GOVERNMENT PRINTING OFFICE :: 1908

UF443
A3

WAR DEPARTMENT,
Document No. 328.
Office of the Chief of Staff.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
Washington, August 20, 1908.

The following Provisional Drill Regulations for Mountain Artillery, prepared by a board consisting of Maj. Edward F. McGlachlin, jr., Fourth Field Artillery, Capt. Le Roy S. Lyon, Fourth Field Artillery, and Capt. Adrian S. Fleming, Fourth Field Artillery, are issued for the information and guidance of the Mountain Artillery. All officers serving with Mountain Artillery will submit to The Adjutant-General on or before June 30, 1909, any suggestions relative to these Provisional Drill Regulations for Mountain Artillery which they believe will add to their value.

By order of the Secretary of War:

J. FRANKLIN BELL,
Major-General, Chief of Staff.



Digitized by the Internet Archive
in 2008 with funding from
Microsoft Corporation



TABLE OF CONTENTS.

PART I.

GENERAL PRINCIPLES AND DEFINITIONS.

CHAPTER I.—*General principles:*

	Par.
Section I. Instruction—	1-7
Object of the instruction-----	8-14
Sequence and method of instruction-----	15-28
Section II. General rules-----	29-34
Section III. Commands-----	35

CHAPTER II.—*Definitions*-----

PART II.

DISMOUNTED INSTRUCTION.

CHAPTER I.— <i>General rules</i> -----	36-40
CHAPTER II.— <i>The soldier dismounted:</i>	
Section I. General provisions-----	41-44
Section II. The recruit-----	45
Position of the soldier, or attention-----	46
To assemble-----	47
The rests-----	48-49
To dismiss the recruits-----	50
Eyes right or left-----	51
Facings-----	52
Salute with the hand-----	53
Setting-up exercises-----	54
Steps and marchings—	
Quick time-----	55-57
Double time-----	58-59
To halt-----	60
To mark time-----	61
Half step-----	62

CHAPTER II.— <i>The soldier dismounted</i> —Continued.	Par.
Section II. The recruit—Continued.	
Steps and marchings—Continued.	
Side step.....	63
Back step.....	64
Change step.....	65
To march to the rear.....	66
To march by the flank.....	67
Covering and marching on points.....	68
Section III. The squad.....	69-70
To form the squad.....	71
Rests, attention, etc.....	72
Alignments.....	73-77
To take intervals.....	78
To assemble.....	79
Marchings.....	80
To the front.....	81
To the rear.....	82
By the flank.....	83-86
Obliquely.....	87-89
To change direction in flank column.....	90
Turnings—	
On a fixed pivot.....	91
On a moving pivot.....	92
Exercises of gun squad and section.....	93
Section IV. Manual of the pistol.....	94-108
CHAPTER III.— <i>The battery dismounted</i> :	
Section I. General provisions.....	109-117
Section II. Posts of officers, noncommissioned officers, etc.....	118-120
Section III. To form the battery dismounted.....	121
To open ranks.....	122
To close ranks.....	123
Alignments.....	124
To dismiss the battery.....	125
Section IV. Maneuvers of the battery dismounted—	
General provisions.....	126-128
To form or march in subdivision column from line.....	129
To change direction in subdivision column.....	130

CHAPTER III.— <i>The battery dismounted</i> —Continued.	Par.
Section IV. Maneuvers of the battery dismounted—Continued.	
To form line of subdivision columns from subdivision column.....	131
To form flank column from subdivision column.....	132
To form subdivision column from flank column.....	133
To form line from subdivision column.....	134
Route order and at ease.....	135

PART III.

FIRING INSTRUCTION.

CHAPTER I.— <i>Object and sequence of the instruction</i>	136–137
CHAPTER II.— <i>The cannoneer:</i>	
Section I. Method of instruction.....	138–140
Section II. Preliminary instruction in matériel and methods of fire.....	141
Section III. Individual duties in the service of the piece—	
Duties in general of the different cannoneers....	142
Duties in detail of the different cannoneers—	
The gunner—	
To set the deflection scale.....	143–144
To announce numbers in a command.....	145–146
To set the sight for range.....	147–148
To level the wheel axle.....	149
To lay the piece.....	150–155
To measure the deflection of a target from an aiming point.....	156–157
To measure the angle of site.....	158–159
To fire the piece.....	160
To cock the piece.....	161
No. 1—	
To open the breech.....	162
To close the breech.....	163
To set and to remove the brake rope..	164–165
No. 2—	
To load the piece.....	166–168
To set and to remove the brake rope....	169

CHAPTER II.— <i>The cannoneer</i> —Continued.	Par.
Section III. Individual duties in the service of the piece—Continued.	
Duties in detail of the different cannoneers—Continued.	
No. 3-----	170
No. 4-----	171
Ammunition corporal—	
Supply of ammunition-----	172
To cut the fuze-----	173
Nos. 5, 6, 7, and 8-----	174
CHAPTER III.— <i>The gun squad</i> :	
Section I. General provisions-----	175-177
Section II. Dispositions and exercises incidental to the service of the piece—	
Composition of the gun squad-----	178-180
Formation of the gun squad-----	181-185
To form the gun squad-----	186
To tell off the gun squad-----	187-189
Post of the gun squad at the piece-----	190
To post the gun squad-----	191
Posts of the cannoneers at the piece-----	192
To post the cannoneers-----	193
To re-form the gun squad-----	194
To change the posts of the cannoneers-----	195-197
Disposition of the piece assembled-----	198
Preparation for action-----	199-200
To move the piece by hand-----	201-203
To resume the order for marching-----	204
To dismount and to mount the piece-----	205-208
To leave the park-----	209-210
Section III. The service of the piece—	
General rules-----	211
Methods of laying-----	212-214
To load and lay—	
Direct laying-----	215
Indirect laying-----	216-217
To fire the piece-----	218
To reload and relay-----	219
To change from direct to indirect laying-----	220

CHAPTER III.— <i>The gun squad</i> —Continued.	Par.
Section III. The service of the piece—Continued.	
To shift the trail-----	221
To change target-----	222
To discontinue and to resume the fire-----	223-224
Special methods of fire—	
Volley fire-----	225-226
Zone fire-----	227-229
Fire at will-----	230-232
Fire at moving targets-----	233-236
Service of the piece with reduced numbers-----	237
CHAPTER IV.— <i>The firing battery</i> :	
Section I. General provisions-----	238
Section II. Duties in general of officers and noncom- missioned officers-----	239
Section III. Method of obtaining distribution of fire-----	240-241
Section IV. Communication of firing data to the guns-----	242-249
Section V. Fire for adjustment and for effect-----	250
For adjustment-----	251
By salvo-----	252-254
By platoon-----	255-256
By piece-----	257
For effect-----	259
Continuous fire-----	260-261
Volley fire-----	262-265
Zone fire-----	266-267
Fire at will-----	268
Moving targets-----	269-270
Section VI. Change of target-----	271-272
Section VII. Replacement of ammunition-----	273
Section VIII. Replacement of casualties-----	274
Section IX. To shelter the personnel from fire-----	275

PART IV.

MOUNTED INSTRUCTION.

CHAPTER I.—*The soldier mounted.*

* * * * *

CHAPTER II.—*The driver:*

Par.

Section I. Object and sequence of the instruction... 276-277

Section II. General provisions—

Guides..... 278

Intervals and distances..... 279

Rests..... 280

To stand to horse..... 281

Section III. The individual driver..... 282

Disposition of the pack harness..... 283-284

The aparejo pack saddle..... 285

To fold the blanket..... 286

Blinding the mule..... 287

To harness..... 288-290

To unharness..... 291-292

To set up the aparejo..... 293

Care of the pack harness..... 294

To lead out..... 295

To gather the mule..... 296

Management of the led mule..... 297

Marchings—

To march to the front..... 298

To halt..... 299

To march by the flank..... 300

To march to the rear..... 301

To march obliquely..... 302

To change direction in column..... 303

To rein back..... 304

Alignments..... 305

Care of the pack mule..... 306-310

To dismiss the drivers..... 311

Section IV. The team packed..... 312-318

To lead out..... 319

To post the teams with their pieces..... 320

Packing and unpacking..... 321

Marchings in column of files—

To march to the front..... 322

To halt..... 323

To march to the flank..... 324

To march to the rear..... 325-326

To march obliquely..... 327

Movements by driver..... 328

CHAPTER II.— <i>The driver</i> —Continued.	Par.
Section IV. The team packed—Continued.	
Marchings in column of files—Continued.	
To change direction-----	329-330
To form flank column from section column--	331
To form section column to the front from flank column-----	332
Passage of teams-----	333
To form column of pairs-----	334
Marchings in column of pairs-----	335
To form column of files-----	336
CHAPTER III.— <i>The section:</i>	
Section I. Composition-----	337-339
Section II. Formations-----	340-345
Section III. Packing—	
Transport-----	346
General instructions—	
Drivers-----	347
Cannoneers-----	348
Disposition of the section-----	349
To pack piece and ammunition-----	350-352
To unpack piece and ammunition-----	353-355
To pack and unpack in column of files-----	356
CHAPTER IV.— <i>The battery mounted:</i>	
Section I. Object and sequence of the instruction--	357-358
Section II. General provisions-----	359-362
Section III. Organization of the battery-----	363-367
Section IV. Duties of officers, noncommissioned offi- cers, etc-----	368-369
Section V. Formations-----	370-374
Normal intervals-----	375
Normal distances-----	376
Posts of individuals-----	377-381
The directing team-----	382
Section VI. The park—	
Disposition of the matériel-----	383
To form the battery-----	384-391
To dismiss the battery-----	392-395
Section VII. Route marches-----	396-398
Section VIII. Commands, signals, etc.—	
Commands-----	399-401
Arm signals-----	402-404

CHAPTER IV.— <i>The battery mounted</i> —Continued.	Par.
Section IX. Maneuvers of the battery—	
General provisions—	
Guides.....	405-412
Gaits.....	413
To form the teams in column of files or pairs.....	414
To align the battery.....	415
To march to the front.....	416
To halt.....	417
To march by the flank.....	418-419
To march to the rear.....	420-421
To march obliquely.....	422
To change direction.....	423-424
To execute a passage of teams.....	425
To close or extend intervals in line.....	426
To form section column to the front from line.....	427-428
To form line from section column.....	429-432
To form flank column from section column.....	433-434
To close or extend intervals in flank column.....	435
To form line to the front from flank column.....	436
To form section column from flank column.....	437
Passage of obstacles.....	438
Section X. To subdivide the battery for action.....	439-442
Section XI. To form in battery and to resume a	
marching formation.....	443-448
To fire to the front, rear, right, or left.....	449
To pack to the front, rear, right, or left.....	450
CHAPTER V.— <i>The battalion mounted</i> :	
Section I. Organization of the battalion.....	467
Section II. Formations of the battalion.....	468-472
Section III. Posts of individuals.....	474
Section IV. To form the battalion.....	475-479
Section V. Maneuvers of the battalion.....	480-481
CHAPTER VI.— <i>The regiment mounted</i> :	
Section I. Organization of the regiment.....	482
Section II. Formations of the regiment.....	483-486
Section III. Posts of individuals.....	487
Section IV. To form the regiment.....	488
Section V. Maneuvers of the regiment.....	489

PART V.

SERVICE OF INFORMATION AND COMMUNICATION.

	Par.
CHAPTER I.— <i>Personnel</i>	490-494
CHAPTER II.— <i>Scouts</i> :	
Section I. Duties of scouts.....	495-498
Section II. Training of scouts.....	499-500
CHAPTER III.— <i>Agents of communication</i>	501-503
Section I. Couriers.....	504
Section II. Marking the route.....	505-506
CHAPTER IV.— <i>Telephone and signal communication</i>	507-512

PART VI.

ARTILLERY IN THE FIELD.

* * *	* *	* *
CHAPTER III.— <i>Reconnaissance and selection of positions</i> :		
Section I. Choice of positions.....	600-606	
Section II. Reconnaissance.....	607-615	
* * *	* *	* *

PART VII.

CEREMONIES.

CHAPTER I.— <i>General rules</i>	1000-1001
CHAPTER II.— <i>Reviews</i> :	
Section I. General rules for reviews.....	1002-1022
Section II. Battalion review.....	1023-1024
Section III. Regimental review.....	1025-1027
Section IV. Brigade review.....	1028
Section V. Garrison review.....	1029
CHAPTER III.— <i>Inspections</i> :	
Section I. General rules.....	1030-1031
Section II. Battery inspection, mounted.....	1032-1034
Battery inspection, dismounted.....	1035-1037
Section III. Battalion inspection.....	1038-1040
Section IV. Regimental inspection.....	1041

	Par.
CHAPTER IV.— <i>Muster</i> -----	1042
CHAPTER V.— <i>Escorts</i> :	
Section I. Escort of the standard-----	1043-1045
Section II. Funeral escort-----	1046-1054
CHAPTER VI.— <i>Presentation to the standard</i> -----	1055
CHAPTER VII.— <i>Guard mounting</i> -----	1056-1065
CHAPTER VIII.— <i>Miscellaneous</i> :	
Section I. The guidon-----	1066-1070
Section II. The standard-----	1071-1074
Section III. The saber-----	1075-1082
Section IV. The band-----	1083-1085
Section V. Honors-----	1086-1110

PART I.

GENERAL PRINCIPLES AND DEFINITIONS.

CHAPTER I.—GENERAL PRINCIPLES.

SECTION I.—*Instruction.*

Object of the Instruction.

1. Preparedness for war is the goal to be kept constantly in view in all peace training. No refinements of drill-ground instruction or other minor details must be allowed to obscure this definite goal or impede progress toward its attainment.

2. The special qualifications required of field artillery in war are the ability, first, to reach the position for action at the proper time and in effective condition; second, to deliver an effective and overpowering fire upon any designated part of the enemy's position.

To meet the first requirement, artillery must be prepared to cover long distances quickly, to overcome all the difficulties and obstacles of the route, and to occupy the position in a skillful manner, with men, animals, and matériel in condition for efficient service.

To meet the second requirement, artillery must be prepared to reach any part of the battlefield with effective fire, and to concentrate its fire upon any desired target.

Mobility, thorough training in fire discipline and fire direction, and extensive practice over varied country, are the essential requisites of the qualifications here called for. The attainment of these qualifications is the special object of artillery instruction.

3. An additional object of instruction is to develop resourcefulness, initiative and self-reliance on the part of artillerymen of all grades.

The regulations prescribe a method of training in the ordinary duties pertaining to the service of artillery. The personnel must be so thoroughly drilled in these duties that in the excitement

of action the same may be performed readily, naturally, and as a matter of second nature.

The regulations also outline general principles according to which artillery is to be handled and fought. A guide is thus furnished as to the best way of dealing with the usual problems which arise. But every problem which arises in service has its own best solution, and this solution must be devised by the officer on the spot. His success will depend upon the extent to which he has prepared himself by previous thought and study and by previous practice in the solution of similar problems.

4. Instruction in peace must, hence, be conducted with a view, first, to drilling the personnel thoroughly in their habitual duties, and second, to affording officers and men practice and experience in dealing with the situations and difficulties apt to arise in campaign.

5. Commanding officers of field artillery should carry out such annual programmes of instruction as will prepare artillery officers for the duties of the next higher grade in time of war. Captains should be required to exercise command of battalions; and lieutenants who have completed one year's service in the field artillery, command of batteries, during a part of each annual course of instruction.

Solutions of practical problems involving at first simple tactical situations with appropriate units, should be required. Practice by officers in making proper dispositions to meet the requirements and developments of tactical situations is the best training for service in war. Officers should be trained to think quickly and logically, and to assume responsibilities unhesitatingly; but errors of judgment should not be criticised harshly, as such criticism causes timidity and consequent inaction, which are generally more productive of harm than misdirected zeal.

6. It is made the duty of all field artillery commanders to see that instruction is conducted in accordance with the principles, and that the means employed are in conformity with the spirit, of the regulations; but in the application of the principles to the solution of practical problems, the methods prescribed are to be taken as guides only. Great latitude should be allowed in adapting these methods to the peculiar conditions of different cases, and subordinates should be encouraged in every way pos-

sible to exercise their skill and ingenuity in solving the problems which present themselves in service.

7. Systems of instruction or of matériel can be perfected only by actual use by troops. To the end that true progress may be made, officers will be encouraged to make suggestions based upon their practical experience in regard to methods of instruction as well as in regard to the different mechanical features of the matériel. The experience of those who are most competent to judge of the merits of such systems will thus be made available for future improvement therein.

Sequence and Methods of Instruction.

8. A progressive order will be followed in all artillery instruction. The annual course of instruction should commence with the smallest unit, the section, and proceed to the larger ones in succession, culminating in the field maneuvers and firing practice of the larger units.

9. Thorough training of the individual soldier is the basis of efficiency. Great precision and attention to detail are essential in this instruction, for from it the soldier must acquire that habit of implicit obedience to orders and of accurate performance of his individual duties which is the indispensable requisite of efficiency in combined training.

10. Recruits should be assembled in small squads for the beginning of their instruction. As the instruction progresses, they will be gradually grouped according to proficiency, in order that all may advance as rapidly as their abilities permit. Those who lack aptitude and quickness will be separated from the others and placed under experienced drillmasters.

The training of the recruit will include instruction in the duties of sentinels, the care of equipments, packing knapsacks, tent pitching, pistol practice, and the customs and courtesies of the service.

11. Short and frequent drills are preferable to long ones, which exhaust the attention of both instructor and recruit.

12. The instructor of each unit is habitually its immediate chief, who should be given all due latitude in conducting the instruction and be held to strict accountability for results attained. The habit of self-reliance and a feeling of responsi-

bility for the instruction of their respective units, as well as a proper feeling of pride therein, may thus be developed among the subdivision commanders.

The instructor will always maintain a military bearing, and by a quiet, firm demeanor set a proper example to the men. Faults should be corrected gradually, without nagging or shouting.

13. Officers and noncommissioned officers of each grade should frequently be practiced in the duties of the next higher grade.

14. Special instruction, such as tent pitching, first aid to the wounded, signaling, and gunner instruction, may appropriately be given by section or by platoon, as a healthy rivalry among the units concerned may thus be developed.

SECTION II.—*General rules.*

15. Movements that may be executed toward either flank are explained as toward but one flank, it being necessary to substitute *left* for *right*, or the reverse, to have the command and explanation of the corresponding movement toward the other flank.

16. Any movement may be executed either from the halt or when marching, unless otherwise prescribed.

17. All movements on foot not specially excepted may be executed in double time. If the movement be from the halt, or when marching in quick time, the command *double time* precedes the command *march*; if marching in double time, the command *double time* is omitted.

18. The gait should habitually be increased or decreased progressively.

19. To execute a movement at the trot, the command *trot* precedes the command *march*, unless marching at the gait desired.

20. Movements or procedures explained for the smaller units are, in general, applicable to the larger ones when under instruction of the same character, the commands being modified so as to be adapted to the particular unit dealt with.

21. The intervals and distances prescribed in the text are in general such that, if marched by the flank from line, the elements will be in column at proper distances; or if marched by the flank from column, they will be in line at proper intervals.

Similarly, if marching obliquely, a second oblique will place the elements in line or column, as the case may be, at proper intervals or distances. If, however, due to differences of length of elements, these conditions do not accurately obtain, the proper interval or distances are gradually secured by appropriate modifications of the gait.

22. If, in forming elements abreast of each other, the commands: 1. *Battery (Platoon, etc.)*, 2. *HALT*, be given during the movement, only those elements halt which have reached their new positions; the others continue the march and halt on reaching their positions.

23. For the purpose of correcting errors while marching, the instructor may command: 1. *In place*, 2. *HALT*; when all halt and stand fast. To resume the march, he commands: 1. *Resume*, 2. *MARCH*.

24. To revoke a preparatory command or, being at a halt, to begin anew a movement improperly begun, the instructor commands: *AS YOU WERE*, at which the movement ceases and the former position is resumed.

25. If a change of formation requires a change of post of officers and noncommissioned officers, they proceed by the shortest route to their posts in the new formation.

26. While the posts of officers and noncommissioned officers are specified in the text, as instructors they go wherever their presence is necessary.

27. Officers and noncommissioned officers who are absent are replaced ordinarily by the next lower in rank. In a battery, chiefs of platoon are replaced by the chiefs of sections of the platoon in the order of rank. The first sergeant, if performing the duties of an officer, the quartermaster and stable sergeants, and the chief mechanic are not replaced. Gunners replace absent chiefs of section; ammunition corporals, absent gunners; and privates, selected for efficiency, absent ammunition corporals.

28. Each unit of artillery has its permanent designation. Thus:

The First, Second, Third, Fourth, etc., Regiment of Field Artillery.

The First or Second Battalion, Third Regiment of Field Artillery.

Battery D, Sixth Field Artillery.

The first, second, third, etc., platoon of a battery.

The first, second, third, fourth, etc., section of a battery.

Units may also be referred to by their temporary relative position in line or column. Thus: The right (center or left), the leading (center or rear) regiment (battalion, battery, platoon, section, or piece). Or, if several units are involved, thus:

The right battery, left battalion.

The leading platoon, center battery.

The left section, right platoon.

The numerical designation of units does not change as their relative order in line or column is changed, except that when the pieces are unpacked and established in line they are designated from right to left as No. 1, No. 2, No. 3, and No. 4.

SECTION III.—*Commands.*

29. Commands are of two kinds: *Preparatory commands* and *commands of execution*.

The preparatory command, such as *forward*, indicates the movement that is to be executed.

The command of execution, such as **MARCH**, **HALT**, causes the execution.

Preparatory commands are distinguished in the text by *italics*; those of execution by **CAPITALS**.

30. The commands prescribed in the text are given by the instructor, except when otherwise specified.

31. To permit of the preparatory command being understood, a well-defined pause should be made between it and the command of execution. The duration of this pause depends in a measure upon the size of the body of troops under command. Ordinarily, in dismounted movements and in mounted movements executed from a halt, the pause should be brief and of uniform duration, as otherwise uncertainty is communicated to the ranks, and a ragged execution of the movement results.

32. The tone of command is animated, distinct, and of a loudness proportioned to the number of men under command. Indifference in giving commands leads to laxity in execution.

Each preparatory command is pronounced in an ascending tone of voice, but always in such a manner that the command of execution may be more energetic and elevated.

On foot the command of execution is pronounced in a firm, brief tone.

In mounted movements, the preparatory commands are more or less prolonged to insure their being heard; the command of execution is always prolonged.

When giving commands to troops, it is usually best to face or look toward them.

33. To secure uniformity, officers and noncommissioned officers are practiced in giving commands.

34. The bugle calls and prescribed arm signals are frequently used in instruction, in order that the officers and men may readily recognize them.

CHAPTER II.—DEFINITIONS.

35. Alignment: A straight line upon which several men, teams, or bodies of troops are formed, or are to be formed.

Base: The element on which a movement is regulated, or on which a formation is made.

Center: The middle point or element of a command.

Column: A formation in which the elements are placed one behind another.

Depth: The space from head to rear of any formation including the leading and rear elements.

Disposition: The arrangement of the elements in a formation.

Distance: Open space between elements in the direction of depth.

Element: One of the similar parts of a larger unit—as a file, gun squad, team, section, platoon, battery, etc.

Facing distance: The difference between the front of a man in ranks, including his interval, and his depth—about fourteen inches.

File: Two men—the front-rank man and the corresponding man of the rear rank. The front-rank man is the *file leader*. A file which has no rear-rank man is a *blank file*. The term *files* applies also to individual men in single-rank formation. A single mounted man in ranks is also called a file.

File closers: The officers, noncommissioned officers, and men acting as such, who, in dismounted formations, are posted one yard in rear of the rear rank in line.

Fire direction: The tactical direction of one or more fire units with a view to bringing their fire to bear at the right place and the right time.

Fire discipline: That condition resulting from training and practice which insures an orderly and efficient working of the personnel in the delivery of fire.

Flank: The right or left of a command in line or column; also the element on the right or left of a line.

By the enemy's *right (left) flank* is meant the flank which the enemy himself would so designate.

Formation: Arrangement of the elements of a command in their order in line, in column, or for battle.

Front: The space in width occupied by a command either in line or column. The term *front* is also used to denote the direction in which the elements of a command face, as well as to denote the direction of the enemy.

The *front* of a gun is the direction in which the muzzle points; of a team, the direction in which the mules face.

Guide: An officer, noncommissioned officer, or private upon whom a command or an element thereof regulates its march.

Interval: Open space between elements abreast of each other.

Laying: The process of pointing a gun for range and direction, so as to cause the trajectory to pass through the target.

Left: The left extremity or element of a body of troops.

Line: A formation in which the different elements are abreast of each other. When the elements are in column, the formation is called a *line of columns*.

Maneuver: A movement executed by a battery or larger unit for the purpose of changing from one formation to another.

Rafale: A burst of fire delivered with great rapidity with a view to searching promptly a certain locality.

The discharge of the complete number of rounds called for in a single execution of *zone fire* constitutes a rafale. Likewise, a volley at a single range or volleys at successive ranges may be termed a rafale.

Rank: A line of men, horses, or teams, abreast of each other.

Right: The right extremity or element of a body of troops.

Salvo: A single discharge from each of the guns of a battery or other unit, fired in regular order from one flank to the other, with intervals of about three seconds.

Volley: The rapid discharge of a certain indicated number of rounds, by each gun of a battery or other unit, each gun firing without regard to the others.

PART II.

DISMOUNTED INSTRUCTION.

CHAPTER I.—GENERAL RULES.

36. Formations are habitually in double rank; the men always fall in at attention.

37. The interval between men in ranks is four inches and between ranks in flank column is twenty-six inches, measured from elbow to elbow. The distance between ranks and between files in flank column is one yard, measured from the back of the man in front to the breast of the man in rear.

The allowance for the front of a man is taken at about twenty-six inches, including the interval; the depth, about twelve inches.

Distance between subdivisions in column is measured from guide to guide.

38. To secure uniformity of interval between files when falling in and in the alignments, each man places the palm of the left hand upon the hip, fingers pointing downward. In falling in, the hand is dropped by the side as soon as the man next on the left has his interval; in the alignments, at the command *front*.

39. When marching in flank column, the leading man of the front rank is, without indication, the guide of the column.

During the oblique march, the leading man of the leading rank is, without indication, the guide.

When marching in line, the front-rank man on the designated flank is the guide; in column of subdivisions, the leading guide is the guide of the column; in line of subdivision columns, the guide of the subdivision on the designated flank is the guide of the line.

40. When marching in line, in column of subdivisions, or in line of subdivision columns, the guide is always announced as soon as the march is begun, or as soon as the line or column is formed. On marching to the rear from line, or on taking the full step after a turn, the guide is announced as soon as the march in the new direction is begun. For example—

Being in line at a halt:

1. *Forward*, 2. *MARCH*, 3. *Guide (right or left)*.

Being in line:

1. *Sections right*, 2. *MARCH*. 3. *Full step*, 4. *MARCH*, 5. *Guide (right or left)*.

Being in flank column:

1. *Sections column right (left)*, 2. *MARCH*, 3. *Guide (right or left)*.

Marching in line:

1. *To the rear*, 2. *MARCH*, 3. *Guide (right or left)*; or,

1. *Right turn*, 2. *MARCH*, 3. *Full step*, 4. *MARCH*, 5. *Guide (right or left)*.

CHAPTER II.—THE SOLDIER DISMOUNTED.

SECTION I.—*General provisions.*

41. This instruction has for its object the training of the individual recruit and afterwards that of the squad. It must be given with the greatest attention to detail.

42. In the instruction of the recruit, frequent short rests should be given, in order that the men may not be unduly fatigued.

The instructor will take advantage of these rests to instruct the recruits in the customs and courtesies of the service, the duties of orderlies, the proper manner of receiving messages from and delivering them to officers, etc., so that when the recruit is finally reported for duty he will not only know his prescribed drill thoroughly, but will know how to conduct himself out of ranks as a trained soldier.

43. From the beginning the instructor will insist on a smart appearance of the recruits, and will require that their clothing be clean and neatly adjusted.

44. The instructor briefly explains each movement, at first executing it himself if necessary. He exacts by degrees the desired precision and uniformity.

SECTION II.—*The recruit.*

45. For the individual instruction, a few recruits, usually not exceeding four, are placed in a single rank, facing to the front and about four inches apart.

They execute the marchings as explained for a squad.

Position of the Soldier, or Attention.

46. Heels on the same line and as near each other as the conformation of the man permits.

Feet turned out equally and forming with each other an angle of about sixty degrees.

Knees straight without stiffness.

Body erect on the hips, inclined a little forward; shoulders square and falling equally.

Arms and hands hanging naturally, backs of the hands outward; little fingers opposite the seams of the trousers; elbows near the body.

Head erect and square to the front, chin slightly drawn in without constraint, eyes straight to the front.

To Assemble.

47. To teach the recruits to assemble, the instructor requires them to place the palm of the left hand upon the hip, below the belt when worn; he then places them on the same line so that the right arm of each man rests lightly against the elbow of the man next on his right, and then directs the left hand to be replaced by the side.

When the recruits have learned how to take their places, the instructor commands: **FALL IN.**

They assemble rapidly as above prescribed, each man dropping the left hand as soon as the man next on his left has his interval.

The Rests.

48. Being at a halt, the commands are: **FALL OUT; REST; AT EASE;** and, 1. *Parade*, 2. *REST*.

At the command *fall out*, the men leave the ranks, but remain in the immediate vicinity. At the command *fall in*, they resume their former places.

At the command *rest*, each man keeps one foot in place, but is not required to preserve silence or immobility.

At the command *at ease*, each man keeps one foot in place and preserves silence, but not immobility.

1. *Parade*, 2. *REST*. Carry the right foot six inches straight to the rear, left knee slightly bent; clasp the hands, without constraint, in front of the center of



Pl. 1, Par. 48.

the body, fingers joined, left hand uppermost, left thumb clasped by thumb and fore finger of right hand; preserve silence and steadiness of position.

49. To resume the attention: 1. *Squad*, 2. *ATTENTION*.

The men take the position of the soldier and fix their attention.

To Dismiss the Recruits.

50. Being in line at a halt: *DISMISSED*.

Eyes Right or Left.

51. 1. *Eyes*, 2. *RIGHT (LEFT)*, 3. *FRONT*.

At the command *right*, turn the head to the right so as to bring the left eye in a line about two inches to the right of the center of the body, eyes fixed on the line of eyes of the men in, or supposed to be in, the same rank.

At the command *front*, turn the head and eyes to the front.

Facings.

52. To the flank: 1. *Right (Left)*, 2. *'FACE*.

Raise slightly the left heel and right toe, face to the right, turning on the right heel, assisted by a slight pressure on the ball of the left foot; place the left foot by the side of the right. Left face is executed on the left heel.

To face, in marching and advance, turn on the ball of the foot in advance and step off with the other foot in the new line of direction; to face in marching without gaining ground in the new direction, turn on the ball of the foot in advance and mark time.

To the rear: 1. *About*, 2. *FACE*.

Raise slightly the left heel and right toe, face to the rear, turning to the right on the right heel and the ball of the left foot; replace the left foot by the side of the right.

Officers execute the about face as follows:

At the command *about*, carry the toe of the right foot about eight inches to the rear and three inches to the left of the left heel without changing the position of the left foot.

At the command *face*, face to the rear, turning to the right on the left heel and right toe; replace the right heel by the side of the left.

Enlisted men out of ranks may use the about face prescribed for officers.

*Salute With the Hand.***53. 1. Right (Left) hand, 2. SALUTE.**

Raise the right hand smartly till the tip of forefinger touches the lower part of headdress (if uncovered, the forehead) above the right eye, thumb and fingers extended and joined, palm to the left, forearm inclined at about forty-five degrees, hand and wrist straight. **TWO.** Drop the arm smartly by the side.

The salute for officers is the same; the left hand is used only when the right is engaged. Officers and men, when saluting, look toward the person saluted.

Setting-up Exercises.

54. All soldiers are regularly practiced in the following exercises, which may be supplemented by those in authorized calisthenic manuals.

The instructor places the men about two yards apart.

In these exercises it is advisable to remove coats and caps.



Pl. 3, Par. 54, 1 Ex.

continuously executed until the command *halt*.

At the command *halt*, given at any time, the position of the soldier is resumed.



Pl. 2, Par. 53.

As a rule, the instructor will not keep the men in a constrained position longer than is necessary to give the next command; and while giving any extended explanation, he will keep the men at ease.

As soon as the exercises are well understood, they may be continued without repeating the commands. For this purpose the instructor gives the commands as prescribed, then adds: *Continue the exercise*; upon which the motions to be repeated are

First Exercise.

1. *Arm*, 2. **EXERCISE**, 3. *HEAD*, 4. *UP*, 5. *DOWN*, 6. *RAISE*.

At the command *exercise*, raise the arms laterally until horizontal, palms upward. **HEAD**: Raise the arms in a circular direction over the head, tips of fingers touching top of the head, backs of fingers in contact their full length, thumbs pointing to the rear, elbows pressed back. **UP**: Extend the arms upward their full length, palms touching. **DOWN**: Force the arms obliquely back and gradually let them fall by the sides. **RAISE**: Raise the arms laterally, as prescribed for the second command. Continue by repeating *head, up, down, raise*.



Pl. 6, Par. 54,
2 Ex.

Second Exercise.

1. *Arms vertical, palms to the front*, 2. **RAISE**, 3. **DOWN**, 4. **UP**.



Pl. 7, Par. 54,
2 Ex.



Pl. 4, Par. 54,
1 Ex.



Pl. 5, Par. 54,
1 Ex.

At the command *raise*, raise the arms laterally from the sides, extended to their full length, till the hands meet above the head, palms to the front, fingers pointing upward, thumbs locked, right thumb in front, shoulders pressed back. **DOWN**:

Bend over till the hands, if possible, touch the ground, keeping the arms and knees straight. **UP**: Straighten the body and swing the extended arms, thumbs locked, to the vertical position. Continue by repeating *down, up*.

*Third Exercise.***1. Arm, 2. EXERCISE, 3. FRONT, 4. REAR.**

At the command *exercise*, raise the arms laterally until horizontal, palms upward. **FRONT:** Swing the extended arms horizontally to the front, palms touching. **REAR:** Swing the extended arms well to the rear, inclining them slightly downward, raising the body upon the toes. Continue by repeating *front, rear*, till the men, if possible, are able to touch the backs of the hands behind the back.



Pl. 8, Par. 54, 3 Ex.

*Fourth Exercise.***1. Leg, 2. EXERCISE, 3. UP.**

At the command *exercise*, place the palms of the hands on the hips, fingers to the front, thumbs to the rear, elbows pressed back. **UP:** Raise the left leg to the front, bending and elevating the knee as much as possible, leg from knee to instep vertical, toe depressed. **UP:** Replace the left foot and raise the right leg as prescribed for the left.



Pl. 9, Par. 54, 4 Ex.

Execute slowly at first, then gradually increase to the cadence of double time. Continue by repeating *up* when the right and left legs are alternately in position.

*Fifth Exercise.***1. Leg, 2. EXERCISE, 3. Left (Right), 4. FORWARD, 5. REAR; or, 5. GROUND.**

At the command *exercise*, place the hands on the hips, as in Fourth Exercise. **FORWARD:** Move the left leg to the front, knee straight, so as to advance the foot about fifteen inches, toe turned out, sole nearly

horizontal, body balanced on right foot. **REAR:** Move the leg to the rear, knee straight, toe on a line with the right heel, sole nearly horizontal. Continue by repeating *forward, rear*.

When the recruit has learned to balance himself, the command *forward* is followed by **GROUND:** Throw the weight of the body forward by rising on the ball of the right foot, advance and plant the left, left heel thirty inches from the right, and advance the right leg quickly to the position of *forward*. Continue by repeating *ground* when the right and left legs are alternately in the position of *forward*.

Sixth Exercise.

1. *Lung*, 2. **EXERCISE**, 3. **INHALE**, 4. **EXHALE**.

At the command *exercise*, place the hands on the hip as in Fourth Exercise. **INHALE:** Inflate the lungs to full capacity by short, successive inhalations through the nose. **EXHALE:** Empty the lungs by a continuous exhalation through the mouth. Continue by repeating *inhale, exhale*.

STEPS AND MARCHINGS.

Quick Time.

55. The length of the full step in quick time is thirty inches, measured from heel to heel, and the cadence is at the rate of one hundred and twenty steps per minute.

56. To march in quick time: 1. *Forward*, 2. **MARCH**.

At the command *forward*, throw the weight of the body upon the right leg, left knee straight.

At the command *march*, move the left foot smartly, but without jerk, straight forward thirty inches from the right, measuring from heel to heel, sole near the ground; straighten and turn the knee slightly out; at the same time, throw the weight of the body forward, and plant the foot without shock, weight of body resting upon it; next, in like manner, advance the right foot and plant it as above; continue the march.

The cadence is at first given slowly, and gradually increased to that of quick time.

The arms swing naturally, the hands moving about six inches to the front, and three inches to the rear of the seam of the trousers.

57. The instructor, when necessary, indicates the cadence of the step by calling *one, two, three, four*; or, *left, right*, the instant the left and right foot, respectively, should be planted.

Double Time.

58. The length of the full step in double time is thirty-six inches; the cadence is at the rate of one hundred and eighty steps per minute.

59. To march in double time: 1. *Forward*, 2. *Double time*, 3. *MARCH*.

At the command *forward*, throw the weight of the body on the right leg.

At the command *march*, raise the hands until the forearms are horizontal, fingers closed, nails toward the body, elbows to the rear; carry forward the left foot, knee slightly bent and somewhat raised, and plant the foot thirty-six inches from the right; then execute the same motion with the right foot; continue this alternate movement of the feet, throwing the weight of the body forward, and allowing a natural swinging motion of the arms.

If marching in quick time, the command *forward* is omitted. At the command *march*, given as either foot strikes the ground, take one step in quick, and then step off in double time.

To resume the quick time: 1. *Quick time*, 2. *MARCH*.

At the command *march*, given as either foot strikes the ground, advance and plant the other foot in double time, resume the quick time, dropping the hands by the sides.

Recruits are also exercised in running, the principles being the same as for double time.

When marching in double time and in running, the men breathe as much as possible through the nose, keeping the mouth closed.

Distances of one hundred, and one hundred and eighty yards are marked on the drill ground, and noncommissioned officers and men practiced in keeping correct cadence and length of pace in both quick and double time.

To Halt.

60. To arrest the march in quick or double time: 1. *Squad*, 2. *HALT*.

At the command *halt*, given as either foot strikes the ground, advance and plant the other foot; place the foot in rear by the side of the other. If in double time, drop the hands by the sides.

The *halt*, while *marking time*, and marching at the *half step*, *side step*, and *back step*, is executed by the same commands.

To Mark Time.

61. Being in march: 1. *Mark time*, 2. *MARCH*.

At the command *march*, given as either foot strikes the ground, advance and plant the other foot; bring up the foot in rear, and continue the cadence by alternately raising and planting each foot on line with the other. The feet are raised about four inches from the ground and planted with the same energy as when advancing.

To resume the full step: 1. *Full step*, 2. *MARCH*.

Half Step.

62. Being in march: 1. *Half step*, 2. *MARCH*.

At the command *march*, given as either foot strikes the ground, take steps of fifteen inches.

To resume the full step: 1. *Full step*, 2. *MARCH*.

The length of the half step in double time is eighteen inches.

Side Step.

63. Being at a halt: 1. *Right (Left) step*. 2. *MARCH*.

Carry and plant the right foot ten inches to the right; bring the left foot beside it and continue the movement in cadence of quick time.

The side step is used for short distances only and is not executed in double time.

Back Step.

64. Being at a halt: 1. *Backward*, 2. *MARCH*.

At the command *march*, step back with the left foot fifteen inches straight to the rear, then with the right, and so on, the feet alternating.

At the command *halt*, bring back the foot in front to the side of the one in rear.

The back step is used for short distances only, and is not executed in double time.

*Change Step.***65.** Being in march: 1. *Change step*, 2. **MARCH.**

At the command *march*, given as the right foot strikes the ground, advance and plant the left foot; plant the toe of the right foot near the heel of the left and step off with the left foot.

The change on the right foot is similarly executed, the command *march* being given as the left foot strikes the ground.

*To March to the Rear.***66.** Being in march: 1. *To the rear*, 2. **MARCH.**

At the command *march*, given as the right foot strikes the ground advance and plant the left foot; then, turning on the balls of both feet, face to the right about and immediately step off with the left foot.

If marching in double time, turn to the right about, taking four steps in place, keeping the cadence, and then step off with the left foot.

*To March by the Flank.***67.** Being in march: 1. *By the right (left) flank*, 2. **MARCH.**

At the command *march*, given as the right foot strikes the ground, advance and plant the left foot, then face to the right in marching and step off in the new direction with the right foot.

Covering and Marching on Points.

68. It should be demonstrated to the recruits that they can not march in a straight line without selecting two points in the desired direction and keeping them covered while advancing.

The instructor indicates two points and requires the recruits in succession to place themselves upon the prolongation of the straight line through these points and then to march upon them in both quick and double time.

A distant and conspicuous landmark is then indicated as a point of direction; the recruit is required to select an intermediate point in line with the point of direction and to march on this line, selecting new points as he advances.

SECTION III.—*The squad.*

69. As soon as the recruits are sufficiently instructed for the purpose, they are formed into squads of convenient size in order to teach them the principles of the alignments, taking intervals, the marchings, and the turnings.

70. For this instruction, the recruits are formed in double rank. The files on the right and left of the squad are always complete; if there be an incomplete file, it will be the second from the left. The rear rank men cover their file leaders accurately at one yard distance.

In the case of a small number of recruits, they may be formed in single rank. The movements described for the double rank formation apply equally well to the single rank, omitting the explanations for the rear-rank men.

To Form the Squad.

71. To form the squad, the instructor designates a recruit as the front-rank man of the right file and indicates to him where the right of the squad is to rest; he then places himself about three yards in front of where the center is to be formed, and commands: **FALL IN.**

The men form on the designated recruit, in two ranks facing to the front, as already prescribed (par. 47).

72. The squad executes *the rests*; resumes *the attention*; *marks time*; and executes *the facings*, *the setting-up exercises*, *the steps*, and *the halt*, and is dismissed by the same commands and means as explained for the recruit.

Alignments.

73. The alignments are first taught by requiring the recruits to align themselves upon two files established as a base.

Being at a halt, the instructor causes the first two files on the flank toward which the alignment is to be made to move forward a few paces, and establishes them as a base; he then commands: 1. *Right (Left)*, 2. **DRESS**, 3. **FRONT.**

At the command *dress*, the first two files execute *eyes right*, and place the left hand upon the hip. The remaining files march to the front, each man shortening the last step so as to place himself about six inches in rear of the new alignment, which should never be passed; each man then executes *eyes right*,

places the left hand upon the hip, whether dressing to the right or left, and taking steps of two or three inches moves up and places his right arm lightly against the elbow of the man on his right, so that his eyes and shoulders are in line with those of the men on his right.

The instructor verifies the alignment of both ranks from the right flank and orders up or back such men as may be in rear or in advance of the line; only the men designated move.

At the command *front*, given when the ranks are aligned, each man turns his head and eyes to the front and drops his left hand by the side.

74. At first, the basis of the alignment is established parallel to the front of the squad; afterwards, in oblique directions.

75. The recruits having learned to align themselves, the instructor establishes the base file and commands: 1. *Right (Left)*, 2. *DRESS*, 3. *FRONT*.

At the command *dress*, the men, except the base file, move forward and all dress as previously explained, the rear-rank men being careful to cover their file leaders accurately.

76. Alignments to the rear are executed on the same principles; 1. *Right (Left) backward*, 2. *DRESS*, 3. *FRONT*.

The men step back, halt a little in rear of the line, and immediately dress up as previously explained.

77. To execute the alignments, using the side step, the instructor establishes the base file a short distance to the right or left of the squad, and commands: 1. *Right (Left) step*, 2. (*Right or Left*), 3. *DRESS*, 4. *FRONT*.

At the command *dress*, the men execute the side step, close toward the base file, and dress as previously explained.

To Take Intervals.

78. Being in line at a halt: 1. *To the right (left) take intervals*, 2. *MARCH*, 3. *Squad*, 4. *HALT*.

At the first command, the rear rank steps back to two yards distance from the front rank; at the command *march*, all face to the right and the leading man of each rank steps off; the other men step off in succession so as to follow the preceding man at two yards.

At the command *halt*, given when all have their intervals, all halt and face to the front.

*To Assemble.***79. 1. To the right (left) assemble, 2. MARCH.**

The front-rank man on the right stands fast, the rear-rank man on the right closes to one yard. The other men face to the right, close by the shortest line, and face to the front.

MARCHINGS.

80. During the marchings the guide conducts the march, preserving with great care the direction and the length and cadence of the step, selecting points on which to march, as explained in paragraph 68.

*To March to the Front.***81. Being at a halt: 1. Forward, 2. MARCH.**

The men step off and march straight to the front.

If in line, the rear-rank men follow their file leaders accurately. The instructor sees that the ranks preserve the alignment and the intervals toward the side of the guide. The men yield to pressure from that side and resist pressure from the opposite side; by slightly shortening or lengthening the step they gradually recover the alignment, and by slightly opening out or closing in they gradually recover the interval, if lost; while habitually keeping the head to the front, they may occasionally glance toward the side of the guide to assure themselves of the alignment and interval, but the head is turned as little as possible for this purpose.

If in flank column the men of the leading file step off at full step; the leading rear-rank man marches abreast of his file leader at twenty-six inches interval. The other files march at the half step, each taking the full step when at one yard distance.

*To March to the Rear.***82. Being in march: 1. To the rear, 2. MARCH.**

Executed as explained in paragraph 66.

If at a halt, the squad may be faced about and then moved forward, as explained in the preceding paragraph; or, without facing about, it may be marched a short distance to the rear, as explained in paragraph 64, by the command: **1. Backward, 2. MARCH.**

Whenever the squad in line is faced about or marched to the rear, all men in the front rank not covered, step into the new front rank.

To March by the Flank.

83. Being in line: 1. *By the right (left) flank*, 2. **MARCH.**

Executed as explained in paragraphs 67 and 81.

The formation obtained by marching by the flank from line is called a *flank column*.

If at a halt, the squad may be marched by the flank by first facing it in the desired direction and then moving it forward, as explained in paragraph 81.

When the march by the flank is executed from flank column while at one yard distance, the files close in gradually toward the guide until they have the prescribed interval.

84. Whenever the flank column is halted while marching at one yard distance, the leading file halts at the command; the others close to facing distance before halting.

85. To close up in flank column without halting: 1. *Close*, 2. **MARCH.**

The leading file takes the half step; the other files close to facing distance and take the half step; all the files having closed to facing distance, the column is halted or marched by the flank as previously explained.

86. To halt the flank column without closing up: 1. *In place*, 2. **HALT.**

To March Obliquely.

87. For the instruction of recruits, the squad being correctly aligned, the instructor causes the squad to face half right or half left, points out to the men their relative positions and explains that these are to be maintained in the oblique march.

88. 1. *Right (Left) oblique*, 2. **MARCH.**

Each man steps off in a direction forty-five degrees to the right of his former front. He preserves his relative position, keeping his shoulders parallel to those of the guide, and so regulates his step as to keep the ranks parallel to their original direction.

If the command *halt* be given while marching obliquely, the men halt faced in the direction in which they are marching.

To resume the oblique march: 1. *Forward*, 2. *MARCH*.

At *half step* or *mark time*, while obliquing, the oblique march is resumed by the commands: 1. *Full step*, 2. *MARCH*.

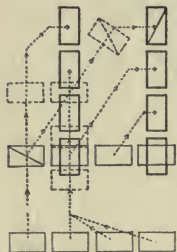
89. While obliquing, to execute a second oblique in either direction: 1. *Right (Left) oblique*, 2. *MARCH*.

If line be formed, the files, if not at proper intervals, close in gradually toward the guide; similarly, if flank column be formed, the files, if not at one yard distance, fall back as prescribed in paragraph 81.

To Change Direction in Flank Column.

90. 1. *Column right (left)*, 2. *MARCH*.

The pivot man of the leading file faces to the right in marching and takes the half step; the man on the marching flank, by twice obliquing to the right, places himself abreast of the pivot man; the latter then takes the full step. The other files march squarely up to the turning point and execute the change of direction on the same ground and in the same manner. When executed from a halt, all the men step off at the command *march*.



Pl. 10, Par. 91.

TURNINGS.

To Turn on Fixed Pivot.

91. Being in line: 1. *Squad right (left)*, 2. *MARCH*, 3. *Squad*, 4. *HALT*; or, 3. *Full step*, 4. *MARCH*.

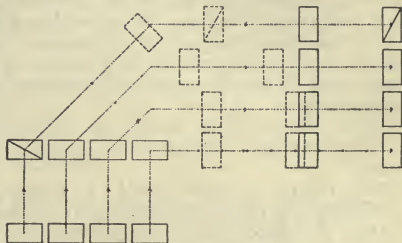
At the second command, the pivot man marks time, turning to the right in his place; the other front-rank men, by twice obliquing to the right, place themselves abreast of the pivot man and mark time. The rear rank does not turn as a rank; the men conform to the movement of the front rank, place themselves covering their file leaders at a distance of one yard and mark time. The fourth command is given when the last man arrives in his new position.

The *turn on fixed pivot* is used in all formations from line into column and the reverse.

To Turn on Moving Pivot.

92. Marching in line: 1. *Right (Left) turn*, 2. *MARCH*, 3. *Full step*, 4. *MARCH*.

At the second command, the pivot man, who is the guide during the movement, faces to the right in marching and takes the half step; the other front-rank men, by twice obliquing to the right, place themselves abreast of the pivot man and take the half step. The rear rank advances and turns on the same ground and in the same manner as the front rank, maintaining the distance of



PL 11, Par. 92.

one yard. All take the full step at the fourth command, which is given when the last man arrives in his new position.

The movement is similarly executed from a halt. At the second command, the pivot man faces to the right as in marching and steps off at half step.

Right (Left) half turn is executed in a similar manner. The pivot man makes a half change of direction to the right and the other men make quarter changes in obliquing.

The *turn on moving pivot* is used by subdivisions of a column in executing changes of direction.

93. The exercises of a *gun squad dismounted* and of a *section dismounted* are similarly executed, substituting in the latter case the word *section* for *squad* in the commands.

SECTION IV.—*Manual of the pistol.*

94. The instruction under this head is first given on foot.

When a lanyard is used, one end is attached to the butt of the pistol; the other end forms a sliding loop, which is passed over the head and drawn snug against the right armpit. The lanyard should then be of just such length that the arm can be extended without constraint.

95. The pistol being in the holster, to raise pistol: 1. *Raise*, 2. *PISTOL*.

At the command *raise*, unbutton the holster flap with the right hand and grasp the stock, back of the hand to the body.

At the command *pistol*, draw the pistol from the holster, reverse it, muzzle up, the hand holding the stock with the thumb and last three fingers; the little finger may be placed under the butt; forefinger outside of the guard; guard to the front; barrel nearly vertical; hand as high as the neck and six inches to the right and front of the right shoulder. This is the position of *raise pistol*.

When dismounted, carry the right foot about twenty inches to the right and place the left hand in the position of the bridle hand.

96. Being at raise pistol: 1. *Return*, 2. *PISTOL*.

Insert the pistol in the holster, back of hand to the body, button the flap, and drop the hand by the side.

If dismounted, bring the right foot by the side of the left and drop the left hand by the side.

If the holster is so constructed that the butt is to the rear, raise and return pistol are executed as already prescribed, except that the back of the hand is to the right and the pistol is not reversed.

97. 1. *Inspection*, 2. *PISTOL*.

Execute raise pistol, except that the pistol is held about six inches in front of the center of the body, barrel up, pointing to the left front and upward at an angle of about forty-five degrees, wrist straight and as high as the breast.

The instructor passes along the rank and examines the pistols. To inspect the pistol minutely, he takes it in his hands and then returns it to the soldier, who grasps it at the stock and resumes *inspection pistol*; each man returns pistol as the inspector passes to the next. If the pistols are not inspected, they are returned by the commands: 1. *Return*, 2. *PISTOL*.

When dismounted, the left hand and right foot remain in place.

For purposes of instruction the men may be required to execute *inspection pistol* simultaneously, suitable caution being given to that effect by the instructor. But at formal inspections the men execute *inspection pistol* in succession as the inspector approaches them.

98. Being at raise pistol: *LOAD.*

Place the pistol at the cylinder in the left hand, latch up, barrel inclined to the left front and downward at an angle of about thirty degrees; draw back the latch with the right thumb, push the cylinder out with the second finger of the left hand, and, if necessary, eject the empty shells by pressing the ejector with the left thumb, right hand steadying the pistol at the stock; take a cartridge from the belt or box, insert it in the chamber, press it home with the right thumb, and so on for each chamber to be loaded; close the cylinder with the left thumb so that the hammer will rest over the empty chamber and raise pistol.

Firings.

99. For single action. Being at raise pistol: 1. *To the front (right oblique, etc.)*; or, 1. *At* (such an object), 2. **READY.**

Cock the pistol with the right thumb and direct the eyes to the front or toward the target.

100. 1. **Squad**, 2. **FIRE.**

Thrust and point the pistol to the front or toward the target, arm nearly or quite extended, keeping the eyes on the object, and fire; resume the raise pistol.

To continue the firing in the same direction, or at the same target: 1. **READY**, 2. **Squad**, 3. **FIRE.**

101. For double action. Being at raise pistol: 1. *To the front (right oblique, etc.)*, 2. **Squad**, 3. **FIRE**; or, 1. *At* (such an object), 2. **Squad**, 3. **FIRE.**

Executed as in paragraph 100, except that at the command *fire*, the pistol is cocked by pressing steadily on the trigger.

102. An almost imperceptible pause may be allowed between the thrusting and firing, in which to correctly point the pistol. Deliberate aiming, however, should not be encouraged. After firing without cartridges, pause an instant to see if the pistol is correctly pointed, to get the personal error.

The instructor must take into account individual peculiarities in order to secure the best results in firing; in such cases departure from the text is permissible.

When mounted, lean slightly forward, bearing on the stirrups; in firing to the front, lean well to the right and slightly forward, to avoid burning or frightening the horse.

103. In a similar manner, the men will be instructed to fire to the left, right, right oblique, left oblique, right rear, left rear, and rear. When firing to the left, the pistol hand will be about opposite the left shoulder; when firing to the rear or right rear, the shoulders are turned about forty-five degrees to the right; when firing to the left and left rear, the shoulders are turned about forty-five degrees to the left.

104. The recruits are first taught the motions of loading and firing without using cartridges. Loading and pointing practice will be given at all gaits when mounted.

105. No cartridges will be used, except when indicated in the first command, thus: 1. *With* (so many) *dummy* (blank or ball) *cartridges*, 2. **LOAD**.

106. To fire at will: 1. *Fire at will*, 2. *To the front*, etc.; or, 2. *At* (such an object), 3. **COMMENCE FIRING**, 4. **CEASE FIRING**.

The soldier fires as rapidly as is consistent with careful pointing at each shot. The raise pistol is resumed after each shot.

At the command *cease firing*, the firing will stop, and the men resume the raise pistol.

107. At dismounted practice, instead of taking the position of *raise pistol* after each shot, the men may be permitted to *lower* the pistol, and to fire from this position. In this case the pistol is lowered without changing the grasp of the hand, the arm by the side and nearly extended, back of the hand to the right; barrel inclined to the front and downward.

108. Target practice will be conducted on the principles explained in the Small-Arms Firing Regulations.

CHAPTER III.—THE BATTERY DISMOUNTED.

SECTION I.—*General provisions.*

109. The instruction prescribed for the Battery Dismounted is applicable, with obvious modifications, to the Platoon Dismounted, the Section Dismounted, and the Gun Squad Dismounted. It is likewise applicable to the exercises of several *gun squads dismounted*.

110. A *section dismounted* comprises all the men assigned to the service of a single piece and its ammunition, or of two

ammunition teams. It consists of one sergeant, who is chief of section; two corporals; the cannoneers; the drivers; and such mechanics, cooks, musicians, and reserve drivers and cannoneers as may be assigned to it for convenience of administration.

The men are permanently assigned to sections, and are transferred by order of the captain only; they may be temporarily attached to sections not their own, to equalize subdivisions at drill or other duty.

A section assigned to the service of a piece and its ammunition is called a *gun section*; a section assigned to the service of two ammunition teams is called an *ammunition section*.

111. The first four sections are *gun sections*; the others are *ammunition sections*. The senior corporal in a gun section is the *gunner*; the junior corporal is the *ammunition corporal*. In an ammunition section the senior ammunition corporal corresponds to the gunner in the gun section and has the same post in ranks.

112. A *platoon dismantled* consists of one lieutenant, who is chief of platoon, and two sections dismantled.

113. A *battery dismantled* comprises three platoons.

114. The guides of a battery are the gunner and the ammunition corporal, posted on its right and left.

The guides of a section or of a gun squad are the gunner and the front rank man on the opposite flank.

115. Chiefs of platoon and section supervise the movements of their platoons and sections, but repeat or give commands only when prescribed.

116. *File closers* will rectify mistakes and insure steadiness and promptness in the ranks.

117. The battery is formed in double rank with the platoons and sections arranged from right to left in the order of their permanent numbers.

The senior lieutenant is assigned as chief of the first platoon, the lieutenant next in rank as chief of the second platoon, and so on.

SECTION II.—*Posts of officers, noncommissioned officers, etc.**In Line.*

118. The captain: Four yards in front of the center of the battery.

Chiefs of platoon: Two yards in front of the center of their platoons.

The fourth lieutenant, when there are but three platoons: In the line of file closers, opposite the center of the battery.

The first sergeant: In the front rank, one yard from the right of the first section.

The quartermaster and stable sergeants: In the front rank, one yard from the left of the left section, in order of rank from right to left.

Chiefs of section: One yard in front of the center of their sections.

Gunners: On the right of the front rank of their sections, not covered in the rear rank.

Ammunition corporals: In the line of file closers, one yard in rear of the left file of their sections, except the ammunition corporal of the left section, who is on the left of the front rank of his section, not covered in the rear rank.

The guidon: On the left of the front rank of the right center section, not covered in the rear rank.

The musicians: In the line of file closers in rear of the first section.

In Subdivision Column.

119. The captain: Four yards from the flank, opposite the center, on the left (right) when the right (left) is in front.

Chiefs of platoon: In platoon column, two yards in front of the center of their platoons; in section column, on the same side as the post prescribed for the captain, two yards from the flank, opposite the center of their platoons.

The fourth lieutenant, when there are but three platoons: On the side opposite the captain, two yards from the flank and opposite the center of the column.

The first sergeant: On the same side as the captain, aligned on the front rank of the nearest subdivision and one yard from it.

The quartermaster and stable sergeants: They turn to the side indicated, and are either four yards in front of the center of the leading subdivision or four yards in rear of the last subdivision, according as the column has been formed toward their flank of the battery or the flank opposite.

Chiefs of section, gunners, ammunition corporals, guidon, and musicians: Same as in line, except that the ammunition corporal of the left section takes post one yard in rear of the left file of his section.

In Flank Column.

120. The posts are same as when faced with the battery from line, except that in the case of the quartermaster and stable sergeants, the ones in rear step obliquely toward the side of the file closers and place themselves abreast of the leading one.

SECTION III.—*To Form the Battery Dismounted.*

121. At the sounding of the *assembly*, the first sergeant, facing the battery and six yards in front of where the center is to be, commands: 1. **FALL IN**, 2. **CALL ROLLS**, 3. **REPORT**.

At the command *fall in*, the gunners place themselves on the line facing to the front in their proper order, at sufficient distance apart for the formation of their sections; the men of each section fall in on the left of their gunner, as prescribed in paragraph 71; the chiefs of section take their posts facing their sections. The assembly having ceased, the first sergeant causes the sections to close to the right, if necessary.

At the command *call rolls*, the chiefs of section call the rolls, and then face to the front.

At the command *report*, the chief of the first section salutes and reports: *First section, present*; or *First section, Corporal ——— and Private(s) ——— are absent*. The first sergeant, having received and verified the report, returns the salute with the right hand. The chief of the second section then reports in like manner, and so on. Men not known to be absent by proper authority are reported absent by the chiefs of section. After receiving the reports, the first sergeant faces about, salutes the captain, or battery officer of the day, and reports: *Sir, the battery is present or accounted for*; or, *Sir, (so many) noncommis-*

sioned officers or privates are absent. The first sergeant then takes his post.

The captain, or battery officer of the day, places himself about twelve yards in front of the center of the battery, superintends the formation, and receives the report of the first sergeant, whose salute he returns.

The lieutenants take their posts as soon as the first sergeant has reported.

During instruction, the officers have the saber drawn, or in the scabbard, at the discretion of the captain. When the captain draws saber, the lieutenants also will draw saber.

To Open Ranks.

122. Being in line at a halt: 1. *Open ranks*, 2. **MARCH**, 3. **FRONT**.

At the first command, the gunners and the left guide of the battery step backward two yards to mark the new alignment of the rear rank; the file closers step backward two yards in rear of this line. A lieutenant in the line of file closers takes post four yards in rear of this line, opposite the center; the captain goes to the right flank and sees that the guides are on a line parallel to the front rank, then places himself facing to the left four yards in front of and two yards to the right of the battery, and commands: **MARCH**.

At the command *march*, the chiefs of platoon step forward two yards, the chiefs of section one yard, and all dress to the right. The first sergeant faces about, places himself, facing to the left, on the line of the rear rank, aligns it, and then faces to the front; the front rank and file closers dress to the right; the rear rank steps backward, halts a little in rear of the line, and then dresses to the right.

The captain aligns the chiefs of platoon and section and the front rank, and verifies the alignment of the rear rank and file closers; the chiefs of platoon and section and the file closers turn their heads and eyes to the front as soon as their alignment is verified.

At the command *front*, the first sergeant, gunners, and left guide resume their posts; the captain places himself six yards in front of the center of the battery.

To Close Ranks.

123. Being at open ranks: 1. *Close ranks*, 2. *MARCH*.

At the command *march*, the lieutenants and chiefs of section resume their posts in line, the chiefs of platoon and section facing about; the rear rank closes to one yard, each man covering his file leader; the file closers close to one yard from the rear rank; the captain then takes his post.

Alignments.

124. The alignments are executed as prescribed for the squad, the guide being established instead of the base file. In aligning the battery, the captain places himself in prolongation of the line, two yards from and facing the flank toward which the alignment is made; after commanding *front*, he resumes his post. This rule applies also to chiefs of platoon or section, when aligning their subdivisions.

To Dismiss the Battery.

125. Being in line at a halt:

The captain directs the first sergeant: *Dismiss the battery*, and returns the salute of the first sergeant.

The officers fall out; the first sergeant salutes, steps three yards to the front, faces to the left, and commands: *DISMISSED*.

In exceptional cases the battery may be dismissed from any formation, either at a halt or marching.

SECTION IV.—*Maneuvers of the battery dismounted.**General Provisions.*

126. The instruction set forth in detail for the soldier dismounted is applicable to the battery dismounted, the *facings*, *steps*, *marchings*, *turnings*, *rests*, etc., all being executed according to the same principles, officers, noncommissioned officers, and file closers conforming to the movements.

127. In the turnings the guide of the battery or subdivision on the flank toward which the battery or subdivision turns is the pivot man of the movement.

During the execution of a turn, as well as on halting after a turn, the men as they arrive abreast of the pivot man align themselves toward him without command.

In executing the turnings by battery, the first sergeant or the quartermaster and stable sergeants and the chief mechanic, when on the marching flank, conform to the movement; when on the pivot flank they face to the rear at the command *march*, and place themselves on the line, facing in the new direction.

128. Whenever the battery in line is faced about or marched to the rear, all men in the front rank, not covered, step into the new front rank; the first sergeant, quartermaster, and stable sergeants, and the chief mechanic place themselves in line with the new front rank, but do not change to the opposite flank. The chief of platoon and section and the file closers maintain their relative positions.

To Form or March in Subdivision Column from Line.

129. 1. *Platoons (Sections) right (left)*, 2. *MARCH*, 3. *Battery*, 4. *HALT*; or, 3. *Full step*, 4. *MARCH*.

At the first command each chief of subdivision cautions: *Platoon (Section) right*; at the second command each subdivision executes a turn on fixed pivot, as explained in paragraph 91. The fourth command is given when all the subdivisions have completed the turn.

While marching in subdivision column the guide of each rear subdivision preserves the trace and step and a distance equal to the front of his subdivision. In obliquing, the subdivisions remain parallel to each other and maintain their relative positions.

To Change Direction in Subdivision Column.

130. 1. *Column right (left)*, 2. *MARCH*.

At the first command the chief of the leading subdivision commands: *Right turn*.

At the command *march*, the leading subdivision turns to the right on moving pivot, as explained in paragraph 92; its chief commands: 1. *Full step*, 2. *MARCH*, on completion of the turn, and announces the guide on the side it was previous to the turn, or repeats the instructor's command for the guide.

The rear subdivisions march squarely up to the turning point and change direction by command of their chiefs.

Column half right (half left) is similarly executed.

To Form Line of Subdivision Columns from Subdivision Column.

131. If marching: 1. *By the right (left) flank*, 2. **MARCH**. If halted: 1. *Right (Left)*, 2. **FACE**, 3. *Forward*, 4. **MARCH**.

The officers, noncommissioned officers, and file closers face with the subdivisions, and maintain their relative positions with respect to them; the guide at the head of each subdivision dresses toward the guide of the battery, and preserves the proper interval from that flank.

The march in column of subdivisions may be resumed by the same commands.

To Form Flank Column from Subdivision Column.

132. If marching: 1. *By the right (left) flank*, 2. *Platoons (Sections) column left (right)*, 3. **MARCH**.

At the command *march*, each subdivision moves by the right flank, executes column left, and follows the subdivision which precedes it in the column.

If halted, the battery is first faced to the right (left) and then the second and third commands are given.

To Form Subdivision Column from Flank Column.

133. 1. *Platoons (Sections) column right (left)*, 2. **MARCH**, 3. *By the left (right) flank*, 4. **MARCH**.

Executed simultaneously by all of the subdivisions. The fourth command is given after the change of direction is completed.

To Form Line from Subdivision Column.

134. 1. *Platoons (Sections) right (left)*, 2. **MARCH**, 3. *Battery*, 4. **HALT**; or, 3. *Full Step*, 4. **MARCH**.

At the first command each chief of subdivision cautions: *Platoon (Section) right*. At the command *march*, each subdivision executes a turn on fixed pivot. The fourth command is given when the sections have completed the turn.

Before forming line the captain requires the guides of the rear subdivisions on the flank toward which the movement is to be executed to cover; if marching, he announces the guide on that flank, if not already there.

Route Order and at Ease.

135. Marching in flank column or section column: 1. *Route Order*, 2. *MARCH*; or, 1. *At ease*, 2. *MARCH*.

The officers carry their sabers at will or in the scabbard; the men retain their positions in ranks, but are not required to keep step.

If the command be *route order*, the men are permitted to talk; if the command be *at ease*, silence is preserved.

To resume the cadenced step: 1. *Battery*, 2. *ATTENTION*.

If halted, while marching at route order, the men remain at rest in ranks; if halted while marching at ease, they remain at ease.

Route order and at ease are not used while marching in double time.

PART III.

FIRING INSTRUCTION.

CHAPTER I.—OBJECT AND SEQUENCE OF THE INSTRUCTION.

136. The objects of this instruction are :

1. To train the personnel in the mechanism of the methods of fire, so that, at the word of command, fire of the desired nature may be delivered with certainty and celerity. (*Fire Discipline.*)

2. To train officers in the conduct of fire, so that they may be enabled to utilize the weapons at their disposal to the best advantage. (*Conduct of Fire.*)

A progressive order of instruction will be followed in each case.

Training in the elementary duties of the two kinds should be undertaken separately at first. Drill in the mechanism of fire is the essential feature of instruction of the first kind ; practice in determining firing data and in adjusting fire under various assumed conditions, the essential feature of instruction of the second kind. As soon as the two kinds of instruction have sufficiently progressed, they should be combined and the training carried on, first in the park or on the drill ground, and then on terrain of every available description ; targets representing as nearly as possible those to be met in service should be attacked first by simulated fire, then with subcaliber ammunition, and finally with the service ammunition.

137. Training in fire discipline begins with the instruction of the *cannoneer*, passes to that of the *gun squad*, and then to that of the *firing battery*.

The *cannoneer* must be taught to perform quickly and correctly the individual duties required of him in the service of the piece. He must acquire such a thorough knowledge of these duties and such a well-grounded habit of performing them properly that in the excitement of action their execution will be a matter of second nature to him.

The gun squad must be trained as a unit, so that its individual members work together smoothly, quietly, and effectively in serving the piece.

The instruction of the firing battery should secure the harmonious cooperation of the organization as a whole in delivering fire as a single fire unit, thus enabling the captain, without confusion or delay, to turn the fire of his battery from point to point, and to concentrate or distribute this fire in such manner as may be desirable.

All the privates of the battery, drivers as well as cannoneers, receive this instruction.

CHAPTER II.—THE CANNONEER.

SECTION I.—*Method of instruction.*

138. For this instruction a few recruits (usually not more than six) are placed under the charge of an instructor who, by simple directions, causes the gun and its ammunition boxes to be placed in such position as he may desire.

139. In view of the great importance of instruction of this character, it is begun as soon as the recruits have had a few drills in *The Soldier Dismounted*, and is continued as an auxiliary to more advanced instructions until the cannoneers are thoroughly instructed and skilled in their individual duties.

140. The instruction involves acquiring:

First. An intimate knowledge of the matériel in use in the battery, the functions to be performed by the principal parts, and the mode of their operation.

Second. Skill and dexterity on the part of the cannoneers in the performance of their duties.

Instruction of the first kind is imparted by careful and painstaking description on the part of the instructor, supplemented in each case, as far as practicable, by actual illustrations of the mode of operation of the particular element of the matériel being described.

Instruction of the second kind is had by persistent drill in the prescribed duties and by continued practice with the various mechanisms under all possible conditions.

SECTION II.—*Preliminary instruction in materiel and in methods of fire.*

141. The instruction is carried on in the squad room, in the park, and elsewhere during the intervals of more advanced work.

The instructor strives to develop, on the part of the soldier, an intimate knowledge of all the matériel in use in the battery, the names of the different parts, their purposes, and methods of operation.

Thus, instruction is had on subjects such as the following:

1. Nomenclature of the principal parts of the piece and its equipments and of the ammunition-carrying devices.

2. Operation of the different parts of the gun; for example, the method of controlling the recoil.

3. Sights and quadrants: description and methods of operation.

4. Laying the gun: principles on which the different methods are based and conditions under which they are used. Thus: (a) laying by the sight for direction and by the quadrant for range; (b) laying by the sight for range and direction.

5. Powders: kinds of powder used, their principal characteristics, and mode of action in the gun.

6. Projectiles: the different kinds and special uses of each.

7. Fuses: the different kinds and their mode of operation.

8. Methods of fire: description of the different kinds, and occasions in general when the different kinds are applicable.

SECTION III.—*Individual duties in the service of the piece.*

DUTIES IN GENERAL OF THE DIFFERENT CANNONEERS.

142. Gunner: Commanding the gun squad.

Laying the piece.

Hooking the lanyard.

Firing the piece.

Ammunition corporal: Preparing ammunition.

Superintending ammunition supply.

No. 1: Opening and closing the breech.

Manning the right wheel and brake rope.

Setting and seating the quadrant.

No. 2: Loading the piece.

Manning the left wheel and brake rope.

No. 3: Giving the general direction to the piece.

Assisting the gunner in pointing.

No. 4: Assisting the ammunition corporal.

Nos. 5, 6, 7, 8: Supplying ammunition.

All cannoneers take care to stand clear at the command *ready* of the gunner.

DUTIES IN DETAIL OF THE DIFFERENT CANNONEERS.

DUTIES OF THE GUNNER.

To Set the Deflection Scale.

143. The deflection scale of the tangent sight is divided into 18 equal parts, of which 9 are on each side of the origin or zero. Each part is called a *point*. A deflection of one point corresponds to a deviation at the target of very nearly $3/1000$ of the range. When the sight leaf index is at the right of the origin, there is said to be *right deflection*; when it is at the left, there is said to be *left deflection*.

To set off a deflection: The gunner turns the deflection screw head until the sight leaf index is opposite the desired graduation.

NOTE.—The following is the rule for correcting observed errors in deviation: *To throw the projectile to the right, move the sight leaf to the right; to throw the projectile to the left, move the sight leaf to the left.*

144. The gunner is repeatedly practiced in setting deflections by command. Thus: *Deflection, 5 right.*

The instructor verifies the setting of the sight.

145. When numbers are part of a command, they are habitually announced thus:

400	four hundred.
405	four hundred and five.
455	four fifty-five.
3000	three thousand.
3005	three thousand and five.
3300	thirty-three hundred.
3305	thirty-three hundred and five.
3355	thirty-three fifty-five.

146. When the telephone is used for the transmission of firing data, or when, for any cause, it is difficult to make the commands distinctly heard, each digit of the number is called off in turn, thus:

400-----four, zero, zero.
3305-----three, three, zero, five..

To Set the Sight for Range.

147. The range scale of the tangent sight is graduated from zero to four thousand yards, the least reading being one hundred yards. The scale may readily be set by eye to read to twenty-five yards.

To set off a range: The gunner turns the range screw head until the range leaf index is opposite the desired graduation.

148. The gunner is repeatedly practiced in setting ranges by command. Thus: *Range, 2700.*

The instructor verifies the setting of the sight.

To Level the Axle.

149. The wheels should be kept as nearly as possible on the same level.

To Lay the Piece.

Direct Laying.

150. When it is possible for the gunner to see the target clearly and to aim directly upon the part of it which the fire of his gun is intended to reach, he ordinarily lays the gun for both range and direction by use of the tangent sight. This is called *direct laying* (213).

The designation *target* (so and so) is the indication that direct laying is to be employed.

The gunner causes a cannoneer (No. 3), working at the trail handspike, to give the piece the general direction; kneeling on his right knee at the left of the trail, the gunner sets the sight for the deflection and range ordered, operates the elevating wheel with his left hand and with his right hand signals to the cannoneer at the handspike to move the trail to the right or left so as to bring the line of sight upon the target; calls

ready when the gun is laid, hooks the lanyard and moves back clear of the line of recoil, the lanyard taut, its end in his right hand.

151. The gunner is repeatedly practiced in laying the piece by command. Thus, the gunner being at his post at the piece:

1. *Target, the chimney on that white house.*
2. *Deflection, 3 left.*
3. *RANGE, 2400.*

Indirect Laying.

152. When it is impracticable for the gunner to aim directly upon the part of the target which the fire of his gun is intended to reach, he ordinarily lays the gun for range by use of the quadrant and for direction by use of the tangent sight. An aiming point clearly visible to the gunner is designated and a deflection ordered such that when the line of sight is directed upon the aiming point the gun will be directed upon the target. This is called *indirect laying* (214).

The designation *aiming point* (so and so) is the indication that indirect laying is to be employed.

The gunner sets the sight for the deflection ordered and lays the gun upon the aiming point as in direct laying (150); causes a cannoneer (No. 1) to set the quadrant at the elevation ordered and to steady the quadrant in its seat; operates the elevating wheel until the bubble of the level is centered; verifies the laying and calls *ready*; proceeds as in direct laying (150).

153. The tangent sight elevation of the aiming point may sometimes be used for rounds after the first. For this purpose the gunner may be directed to read and announce the sight elevation after the gun has been laid, as described in the preceding paragraph. When this method is practicable, the gun is thereafter laid as in direct laying (150).

154. The arc of the quadrant is graduated from zero to sixty-five degrees. It may be used to measure angles of either elevation or depression. Its index arm carries a sliding level with an index, the arm being graduated from zero to sixty minutes. For a given range the corresponding angular elevation is determined from a range table; the necessary corrections applied to this tabular range angle give the elevation to be used. A given elevation is set off by moving the index arm until the

index at its end is opposite the desired graduation on the arc, and sliding the level along the arm until the level index is opposite the desired graduation on the arm.

155. The gunner is repeatedly practiced in indirect laying by command. Thus, the gunner being at his post at the piece:

1. *Aiming point, the chimney on that white house.*
2. *Deflection, 8 right.*
3. **ELEVATION, 13 DEGREES, 27 MINUTES** (152).

Or:

3. **RANGE, 3200** (153).

The instructor verifies the settings of the sight and quadrant and the centering of the bubble, sees that the gun is laid accurately upon the aiming point, and verifies the reading of the sight elevation.

To Measure the Deflection of a Target from an Aiming Point.

156. The gun being laid directly upon the target, the gunner moves the sight leaf until the line of sight is upon the aiming point. The reading is then the deflection sought.

NOTE.—When the sight is directed upon the target, the deflection reading should be zero unless a correction for drift or wind has been made.

157. The gunner is repeatedly practiced in measuring deflections. Thus, the gun being laid in direction upon any target:

1. *Aiming point, that clock tower.*
2. **MEASURE THE DEFLECTION.**

The instructor verifies the reading and sees that the sight is laid accurately upon the aiming point.

To Measure the Angle of Site.

158. The angle of site of any designated target is the angular difference of level between the target and the gun. It may be measured by sighting directly upon the target with the sight set at zero range, placing the quadrant upon its seat, centering the bubble by moving the index arm and the sliding level and reading the indicated angle.

NOTE.—The angle of site may be one of depression or one of elevation. If the former, it is subtracted from the quadrant elevation for the range used; if the latter, it is added.

159. The gunner is repeatedly practiced in measuring angles of site.

Thus:

1. *Target, that stone bridge.*
2. **MEASURE THE ANGLE OF SITE.**

The instructor verifies the setting of the sight, the centering of the bubble and the reading of the quadrant.

To Fire the Piece.

160. The gunner having called *ready* (150), the instructor commands:

1. *No. 1* (or such number).
2. **FIRE.**

The gunner draws the lanyard smartly toward him so as to trip the trigger arm and drops the end of the lanyard or places the lanyard over his shoulders.

To Cock the Piece.

161. In the event of a misfire the gunner commands: **STAND FAST**, and recocks the piece by placing the loop of the lanyard over the recocking hook of the firing pin and pulling steadily to the rear until the pin is caught by the sear.

DUTIES OF NO. 1.

To Open the Breech.

162. No. 1 grasps the operating lever with his left hand and compresses the lever latch; draws the lever to the rear and swings the block to the right.

To Close the Breech.

163. No. 1 grasps the operating lever with his left hand, pushes it to the left, and swings the block smartly to its seat.

*To Set the Brake Rope.***164.** The instructor commands: **BRAKES ON.**

No. 1 unhooks the right brake rope from the drag washer with his right hand and with his left hand passes it through the trail handle, pulls it to the front, and passes it between the lower rear spokes of the wheel into his right hand; grasps the brake rope ring with his left hand and engages the hook in it near the wheel; tightens the rope by turning the wheel to the rear.

*To Remove the Brake Rope.***165.** The instructor commands: **BRAKES OFF.**

No. 1 disengages the hook from the ring; grasps the hook and pulls the rope to the front until it clears the trail handle; engages the hook in the drag washer.

DUTIES OF NO. 2.*To Load the Piece.*

166. No. 2 takes the cartridges from the ammunition corporal and inserts them in the chamber, assuming the most convenient position to reach them on the one side and to insert them on the other. In loading, he holds the middle of the projectile in his left hand, the base of the cartridge with his right, inserts the head of the projectile in the chamber, and pushes it smartly forward. The closing of the block insures the proper seating of the projectile.

167. Except in rapid fire, No. 2 receives the empty cartridge cases as they are ejected and places them on the ammunition boxes. In rapid fire they are collected and stored as opportunity offers.

168. When using drill cartridges, No. 2 always receives them as they are ejected and places them on the ammunition boxes.

To Set and to Remove the Brake Ropes.

169. No. 2 mans the left brake rope in a manner similar to No. 1 (164, 165).

DUTIES OF NO. 3.*To Give the General Direction to the Piece.*

170. No. 3 is repeatedly practiced in pointing the piece quickly and accurately upon different objects. For this purpose he stands at the end of the handspike, grasps it with both hands, looks along the cradle rings and shifts the trail to the right or left so as to direct the gun upon the target. Thus:

1. *Target, the smoke stack of that factory.*

2. *AIM.*

The instructor verifies the pointing.

DUTIES OF NO. 4.

171. No. 4 assists the ammunition corporal; withdraws the cartridges from the ammunition boxes, removes them from their cases, strips the covering from their fuzes and places them on top of the boxes with their points to the rear, conveniently for the ammunition corporal; replaces empty cases or drill cartridges in the boxes.

DUTIES OF THE AMMUNITION CORPORAL.

172. The ammunition corporal cuts fuzes and superintends the supply of the designated ammunition to the piece.

To Cut the Fuze.

173. The cartridge lying on an ammunition box, point to the rear, the ammunition corporal turns it until the desired graduation of the train is uppermost; steadies it with the left hand and with the right hand inserts the point of the fuze punch pin in the desired graduation, holds the fuze punch so that the pin will be perpendicular to the axis of the fuze and presses the handles of the punch together until the inner surface of the punch is in contact with the surface of the fuze; raises the upper handle until the pin is withdrawn.

DUTIES OF NOS. 5, 6, 7, AND 8.

174. Nos. 5, 6, 7, and 8 carry ammunition by hand from ammunition mules to the guns when necessary, perform such other duties as may be prescribed by the instructor or chief of section and replace casualties.

CHAPTER III.—THE GUN SQUAD.**SECTION I.—General provisions.**

175. As soon as the cannoneers have been instructed in their individual duties, they are taught to work together as a *gun squad*.

176. The efficient service of the gun depends upon the orderly cooperation of the members of the gun squad as well as upon the skill of the individual cannoneers. Therefore the habit of combined effort must be acquired.

177. An alert and soldierly manner is exacted of the cannoneers and they should be taught to perform their duties as briskly and rapidly as is consistent with efficient service.

SECTION II.—Dispositions and exercises incidental to the service of the piece.

178. The cannoneers assigned to the service of a gun section constitute a *gun squad*.

179. For the service of the mountain gun, the squad is ordinarily composed of 2 corporals and 8 privates. The senior corporal is the *gunner*; the junior, the *ammunition corporal*.

180. The cannoneers assigned to the service of an ammunition section constitute an *ammunition squad*. It consists of two corporals and such number of privates as may be assigned. The senior corporal is the ammunition corporal of the first ammunition team of the section; the junior, of the second (338). Instructions prescribed for the gun squad apply also to the ammunition squad with obvious modifications, the senior corporal performing the duties of the gunner so far as practicable.

Formation of the Gun Squad.

181. The gun squad is formed in double rank, Nos. 1, 2, 3, and 4 from right to left in the front rank, covered, respectively, by Nos. 5, 6, 7, and 8 in the rear rank.

If there is not a complete squad the highest numbers are omitted and the other numbers are arranged as though the squad were complete.

182. The ammunition squad is formed in double rank, Nos. 5, 6, 7, and 8 of the first ammunition team from right to left in the front rank, covered respectively by Nos. 5, 6, 7, and 8 of the second ammunition team in the rear rank.

If there is not a complete squad, vacancies in the front rank are filled by selection from the rear rank, the cannoneers in the rear rank close to the right and take the same numbers as those whom they cover.

183. In squad formations the senior corporal is on the right and the junior on the left of the front rank, both uncovered in the rear rank.

184. At mounted formations the ammunition corporals are ordinarily mounted.

185. When thoroughly instructed, corporals and privates are permanently assigned to the duties for which they are best fitted.

To Form the Gun Squad.

186. The instructor indicates the place of formation and commands: **FALL IN.**

The gunner repeats the command and places himself where the right of the squad is to rest, facing in the proper direction.

The cannoneers move at double time and form on the left of the gunner (181, 182).

To Tell Off the Gun Squad.

187. The instructor commands: **CALL OFF.**

The cannoneers in the front rank call off in turn from right to left, *one, two, three, four*, followed by the cannoneers in the rear rank from right to left, *five, six, seven, eight*. The gunner and ammunition corporal do not call off.

188. In an ammunition squad the cannoneers in the front rank call off in turn from right to left, *five, six, seven, eight*, followed by those in the rear rank in the same order.

189. After having called off, the cannoneers fall in at once in their proper order at subsequent formations.

Post of the Gun Squad at the Piece.

190. The gun squad is formed in rear of the piece, its front and center one yard from the end of the handspike.

To Post the Gun Squad.

191. The gun squad is marched to the park and, on arriving near the piece, the instructor commands: **SQUAD POST.**

The gunner marches the squad to its piece and posts it (190).

NOTE.—The instructor causes the squad to approach the piece from the right flank if its left is in front and from the left flank if its right is in front.

Posts of the Cannoneers at the Piece.

192. The gunner at the left of the trail, right foot touching it, heels on line with the spade.

The ammunition corporal in rear of the ammunition boxes, three yards to the left of No. 3 and on line with him.

No. 1 on the right of the piece, right hip on line with the rear of the wheels and two feet outside the right wheel.

No. 2 on the left of the piece in a position corresponding to that of No. 1.

No. 3 at the end of the handspike.

No. 4 in rear of the ammunition boxes on the left of the ammunition corporal.

Higher numbered cannoneers are in line in the order of their numbers from right to left, their center two yards in rear of the end of the handspike. In action they may be posted with the ammunition teams.

All cannoneers face to the front, except Nos. 1 and 2, who face the piece.

*To Post the Cannoneers.***193. 1. Cannoneers, 2. POSTS.**

The cannoneers leave the ranks, if formed, and move at double time by the shortest practicable routes to their posts at the piece. If the squad is posted at the piece, the cannoneers in the rear rank stand fast, unless otherwise ordered (192).

NOTE.—For preliminary instruction, the squads are posted with their pieces on entering the park and the cannoneers are

posted from this position. The command is general, however, and is applicable when the cannoneers are in or out of ranks, at a halt, or marching.

To Re-form the Gun Squad.

194. The cannoneers being at their posts: **FALL IN.** The squad is formed (186) in rear of the piece (190).

To Change the Posts of the Cannoneers.

195. In order to exercise the cannoneers in all the duties connected with the service of the piece, their posts are frequently changed.

196. The cannoneers being at their posts: 1. *Change posts*, 2. **MARCH.**

No. 1 takes the post of No. 3; No. 3 of No. 4; No. 4 of No. 2; No. 2 of No. 1; all moving at double time by the shortest practicable routes.

197. The gunner and ammunition corporal should be frequently changed.

Disposition of the Piece Assembled.

198. The *piece*, with breech and muzzle covers in place, points to the front, its axle horizontal, the handspike in its socket, the brake ropes hooked in the drag washers and extended to the rear, the tangent sight in its pouch.

The *ammunition boxes* are compactly arranged, their right edge two yards to the left of the trail, their rear edge on line with the spade.

The *equipment* (lifting bars and drag ropes) is two yards to the right of and parallel to the handspike, its rear on line with the end of the handspike.

Preparation for Action.

199. The piece being assembled: **PREPARE FOR ACTION.**

The gunner removes the breech cover; operates the elevating gear; places the lanyard over his shoulders; takes the sight from its pouch and keeps it in his possession.

No. 1 operates the trigger and breech mechanism; examines the breechblock and chamber, cleaning them with a wiping cloth if necessary.

No. 2 removes the muzzle and front sight covers.

The ammunition corporal and No. 4 arrange the ammunition boxes, dispose themselves conveniently for preparing and serving ammunition to the piece, and open the boxes.

Nos. 5, 6, 7, and 8 act under the orders of the instructor. They may be sent to the rear.

In action the cannoneers kneel or sit.

200. The command *prepare for action* is always given before firing and at such times as may be necessary for instruction.

To Move the Piece by Hand.

201. To the front or rear: 1. *Forward (backward)*, 2. **MARCH**, 3. **HALT**.

At the first command, Nos. 1 and 2 grasp the brake ropes; the gunner grasps the handspike; No. 3 picks up the equipment.

At the second command, the piece and equipment are moved in the indicated direction; the ammunition corporal and other cannoneers present move the ammunition.

At the third command, the gunner lowers the trail; No. 3 replaces the equipment; Nos. 1 and 2 extend the brake ropes to the rear; all the cannoneers assist in moving up the ammunition and then resume their posts.

202. To the flank: 1. *By the right (left) flank*, 2. **MARCH**, 3. **HALT**.

At the first command, the gunner points the piece in the indicated direction; the movement is then executed as already explained (201), except that upon halting the piece is pointed in its original direction.

203. If the piece has to be moved by hand over a considerable distance or over difficult ground, all of the cannoneers assist at the piece and ammunition in turn. For this purpose: **FIX DRAGROPES**.

Nos. 1 and 2 dispose the brake ropes as directed by the gunner; each takes a dragrope from No. 3 and engages it in the drag washer on his side; Nos. 1 and 5 man the right rope, Nos. 2 and 6 the left rope, in order from rear to front and all on the

outside of the ropes; Nos. 7 and 8 man both ropes in order from rear to front on the inside of the ropes; Nos. 3 and 4 assist the gunner at the handspike. The movement is executed as already explained (201, 202), except that the piece is always moved muzzle first and that upon halting Nos. 1 and 2 detach the dragropes and pass them to No. 3.

To Resume the Order for Marching.

204. The piece being prepared for action: **MARCH ORDER.**

The gunner replaces the lanyard, the tangent sight in its pouch, and the breech cover.

Nos. 1 and 2 disengage the brake ropes and wind them in the wheel spokes; No. 2 replaces the muzzle and front sight covers.

The ammunition corporal and No. 4 secure the ammunition in the boxes and arrange the latter conveniently for packing, assisted by other unoccupied cannoneers.

To Dismount and to Mount the Piece.

205. To dismount the piece: 1. *By detail*, 2. *Dismount piece.*

Each odd-numbered cannoneer takes a lifting bar, No. 5 the long one; Nos. 1, 3, 7, and 5 run to the right, Nos. 2, 4, 8, and 6 to the left of the piece, all in the order given from front to rear; the gunner removes the handspike, places it beside the trail and stands astride the trail at the breech.

3. GUN.

The gunner unlocks the gun from the piston rods, pulls it a few inches from the cradle and steps aside to the left; No. 5 passes his bar through the lifting ring to No. 6 and they withdraw the gun from the cradle until its front collar rests on the bridge; No. 7 passes his bar under the muzzle to No. 8; No. 5 calls *heave* and all together lift the gun and, moving to the rear, place it on the ground; Nos. 5 and 7 place their bars at the right of the trail; all resume their places at the carriage.

4. CRADLE.

The gunner gives the cradle its extreme depression and unlocks it from the trail and elevating gear; Nos. 1 and 3 pass their bars through the front and rear rings to Nos. 2 and 4, respectively; as soon as the cradle is unlocked No. 1 calls *heave* and all together lift the cradle and place it in front of the

trail; the gunner runs the elevating gear to its extreme elevation; Nos. 1 and 3 place their bars at the right of the trail; all resume their places at the carriage:

5. *WHEELS.*

No. 6 supports the front of the trail; the gunner unlocks the axle; No. 6 lowers the trail and steadies the axle while Nos. 7 and 8 unhook the brake ropes and remove the linch pins and washers; No. 6 calls *heave* and Nos. 7 and 8 remove the wheels and place them on the ground beside the trail; No. 6 places the axle across the flask; all resume their posts at the trail as though the piece were assembled (192).

206. To dismount the piece without detail: *DISMOUNT PIECE.*

The piece is dismounted as already explained (205), without further command.

207. To mount the piece: 1. *By detail*, 2. *Mount piece.*

Each odd-numbered cannoneer takes a lifting bar, No. 5 the long one; Nos. 1, 3, 7, and 5 run to the right, Nos. 2, 4, 8, and 6 to the left of the trail, all in the order given from front to rear.

3. *WHEELS.*

No. 6 places and locks the axle in its bearings and raises the front of the trail; the gunner gives the elevating gear its extreme depression; Nos. 7 and 8 place the wheels on the axle, secure them with the washers and linch pins and attach the brake ropes; all resume their places at the carriage.

4. *CRADLE.*

Nos. 1 and 3 pass their bars through the front and rear rings to Nos. 2 and 4, respectively; No. 1 calls *heave* and all together lift the cradle and place it on the trail; the gunner locks the cradle to the trail and to the elevating gear and brings it approximately level; Nos. 1 and 3 place their bars at the right of the trail; all resume their places at the carriage.

5. *GUN.*

Nos. 5 and 7 pass their bars through the ring and under the muzzle to Nos. 6 and 8, respectively; No. 5 calls *heave* and all together lift the gun and place the front collar on the bridge of the cradle; No. 7 places his bar at the right of the trail; Nos. 5 and 6 push the gun slowly forward until the stud engages in the groove of the bridge; No. 5 places his bar at the right of the trail; the gunner stands astride the trail and pushes the

gun home and locks it to the piston rods; all resume their posts at the piece (192).

208. To mount the piece without detail: *MOUNT PIECE.*

The piece is mounted as already explained (207), without further command.

To Leave the Park.

209. At the conclusion of the instruction in the park, the instructor causes the matériel to be properly cared for, forms the squad, marches it to the battery parade ground, and dismisses it.

210. In the instruction of several squads, the instructor forms the squads at the pieces (190), faces them to the right or left, and commands: 1. *Close*, 2. *MARCH*. The leading squad stands fast, the others close on the leading squad. All are then marched to the battery parade ground and dismissed.

SECTION III.—*The service of the piece.*

General Provisions.

211. 1. The individual duties of the cannoneers in loading, laying, fuze cutting, etc., are performed as prescribed in "The cannoneer" (138 *et seq.*).

2. In firing instruction, a target or aiming point is designated, the firing data are announced, and the operations of setting sights, cutting fuzes, loading, pointing, and firing are performed as in actual firing.

3. The instructor utilizes every means at his disposal, such as drill cartridges, subcaliber tubes, etc., to simulate as nearly as possible the conditions that obtain when service ammunition is used.

4. To gain greater facility in changing targets and in firing at moving targets, it is advisable, if time admits, to dig a semi-circular trench for the spade as soon as a position has been occupied.

5. As much of the firing data as practicable may be communicated and set off on the instruments before occupying a position or making ready to fire.

In all cases instruments are set and the operations of cutting fuzes, laying, and loading are performed as rapidly as possible after the firing data have been announced.

The announcement of the range or quadrant elevation as a command is the indication that all the data have been announced and is the signal for loading. The command *fire at will* is also a signal for loading.

In all cases the instructor gives the command or signal for firing or commencing the fire.

Methods of Laying.

212. There are two methods: *Direct* and *Indirect*.

213. *Direct laying* consists in bringing the line of sight upon the part of the target that the fire of the gun is intended to reach. This method (150) is used habitually when the gunner can clearly see through the sight the part of the target assigned to his gun.

214. *Indirect laying* consists in taking some well marked aiming point, generally outside the target, and setting off a deflection such that when the line of sight is brought upon the aiming point the gun will be properly directed upon the target. This method (152) is the rule when the gunner can not clearly see through the sight the part of the target that the fire of his gun is intended to reach. As quadrant elevation is used for at least one round (153), the angle of site of the target must be measured (158) and applied as a correction to the tabular range angle.

To Load and Lay.

215. *Direct laying:* The piece being prepared for action and the cannoneers at their posts, the instructor commands, for example:

(Time fire.)

1. *Target, that column of infantry.*
2. *Deflection, 4 right.*
3. *Time, 7 seconds, 5 sixths.*
4. *RANGE, 2200.*

(Percussion fire.)

1. *Target, that stone house.*
2. *Deflection, 4 right.*
3. *Common (double common) shell.*
4. *RANGE, 2400.*

The cannoneers proceed to their respective duties as soon as the necessary data have been announced.

The *gunner*: 1. As soon as the piece has been loaded, lays for the range and direction indicated (150), causing the trail to be shifted (221), if necessary.

2. As soon as the piece is laid, calls *set* if the brake ropes are to be put on.

3. As soon as the brake ropes are adjusted, verifies or corrects the laying, calls *ready*, and hooks the lanyard.

4. Takes his post for firing (150).

The *ammunition corporal* cuts fuzes and passes cartridges to No. 2 (172, 173).

No. 1: 1. Opens the breech, closing it as soon as the cartridge has been inserted (162, 163).

2. Puts on the right brake rope at the command *set*, working simultaneously with No. 2, taking care not to derange the laying (164).

No. 2: 1. Inserts a cartridge smartly in the chamber (166).

2. Puts on the left brake rope at the command *set*, working simultaneously with No. 1, taking care not to derange the laying (164).

No. 3: 1. Gives the piece the general direction (170).

2. Assists the gunner in laying the piece for direction.

No. 4: Assists the ammunition corporal (171).

216. Indirect laying: The piece being prepared for action, the cannoneers at their posts, the instructor commands, for example:

(Time fire.)

1. *Aiming point, that clock tower.*
2. *Deflection, 4 left.*
3. *Time, 14 seconds, 1 sixth.*
4. *QUADRANT, 14 DEGREES, 21 MINUTES.*

(Percussion fire.)

1. *Aiming point, that clock tower.*
2. *Deflection, 4 left.*
3. *Common (double common) shell.*
4. *QUADRANT, 14 DEGREES, 21 MINUTES.*

The cannoneers proceed to their respective duties as soon as the necessary data have been announced, the same as prescribed in the preceding paragraph, except that the gunner lays the piece as in paragraphs 152 and 154, assisted by No. 1.

217. The several duties to be performed by the members of the gun squad in the service of the piece, set forth in the two preceding paragraphs, can be most readily and effectively combined to insure mutual cooperation only as a result of practice and experience. To this end persistent drill under all possible conditions is most important.

To Fire the Piece.

218. The piece being loaded and laid, the gunner fires the piece at the command of the instructor (160).

As soon as the piece is fired, No. 1 opens the breech so as to eject the cartridge case (162), which No. 2 receives (167-168) and No. 4 stores (171).

To Reload and Relay.

219. If the instructor desires to fire again at the same target he makes such changes as may be necessary in the firing data by commands similar to those in paragraphs 215 and 216. He does not repeat data which he desires to remain unchanged, except that he always announces the range or the quadrant elevation as a definite signal for loading.

1. *Time, 7 seconds, 2 sixths.*

2. *RANGE, 2100.*

1. *Time, 14 seconds, 4 sixths.*

2. *QUADRANT, 14 DEGREES, 52 MINUTES.*

The piece is loaded, laid, and made ready for firing as soon as the necessary data are announced.

To Change from Direct to Indirect Laying.

220. If on account of lack of visibility of the target or for other causes it becomes desirable to pass from direct to indirect laying, the instructor commands, for example:

1. *Aiming point, that lone tree.*

2. *MEASURE THE DEFLECTION AND THE ANGLE OF SITE.*

The gunner measures the deflection (156) and the angle of site (158) and announces them.

The instructor then gives the necessary commands for loading and laying (216).

To Shift the Trail.

221. If it becomes necessary to move the trail to the right or left, the instructor commands: 1. *Trail*, 2. *RIGHT (LEFT)*.

Nos. 1 and 2 execute *brakes off* (165), if necessary, and under direction of the gunner, No. 1 at the right wheel, No. 2 at the left wheel, and No. 3 at the handspike turn the piece until the line of sight comes approximately upon the target or the aiming point, when the gunner calls *posts*, and the cannoneers resume their posts; or the gunner may call *set*, at which command the brakes are set and all resume their posts.

To Change Target.

222. To fire at a new target, the instructor commands: *CHANGE TARGET*, and at once points out the new target in direct laying or announces the new deflection in indirect laying. For example:

(Direct laying.)

CHANGE TARGET, THAT BATTERY.

(Indirect laying.)

1. *Change target, aiming point the same.*
2. *DEFLECTION, 3 LEFT.*

If necessary the gunner commands: 1. *Trail*, 2. *RIGHT (LEFT)* (221), and then causes the piece to be prepared for firing. In indirect laying he at once sets off the new deflection so that he may direct the line of sight upon the aiming point.

The instructor announces the firing data and the piece is loaded, laid, and fired, as already prescribed.

The gun squad should be frequently practiced in the important exercise of changing target.

To Discontinue and to Resume the Fire.

223. To suspend the fire, the instructor commands or signals: *CEASE FIRING*. The signal is a long blast on the whistle, or the arm raised and held vertical until the signal is obeyed.

The loading and firing are discontinued. No. 1 opens the breech.

If a projectile is in the chamber whose fuse is safe or may be made safe, No. 2 removes the cartridge and passes it to the

ammunition corporal and it is stored. Otherwise, the instructor causes loaded guns to be fired.

The cannoneers remain at ease.

224. To resume the fire, the instructor gives the necessary commands for resuming the interrupted method of fire or for taking up a new one.

If it is not intended to resume the fire the instructor commands: 1. *Cease firing*, 2. **MARCH ORDER** (204).

Special Methods of Fire.

VOLLEY FIRE.

225. In volley fire each piece fires a specified number of rounds as rapidly as is consistent with accurate laying and orderly service of the piece.

The firing data, usually determined by a previous fire for adjustment, are the same for all the rounds of a volley.

226. The target or aiming point being well understood and the firing data established, the instructor commands, for example:

1. *Volley fire.*
2. *Three rounds.*
3. *Time, 10 seconds, 5 sixths.*
4. **RANGE, 2800.**

The piece is at once loaded and laid for the first round (215, 216), but the firing does not commence until the instructor commands: **COMMENCE FIRING**. At this command the gunner fires the piece and the service of the piece is then carried on continuously until the specified number of rounds has been fired, the gunner firing as soon as the piece is loaded and laid and the cannoneers are clear.

To avoid mistakes, the ammunition corporal, as he passes each cartridge, calls out the range and the number of the round in the volley, thus: *2800, one; 2800, two; 2800, three.*

ZONE FIRE.

227. In zone fire each piece fires three rounds at each of four ranges one hundred yards apart, or twelve rounds in all, as rapidly as is consistent with accurate laying and orderly service of the piece.

The firing data, usually determined by a previous fire for adjustment, are the same for all the rounds, except that after each group of three rounds the range is increased one hundred yards. The initial range, which is always the shortest to be employed, is announced in the command. Fire is opened at this range and is carried on continuously until the twelve rounds have been fired, the change of one hundred yards in range and fuse length being made after each group of three rounds (228).

228. The target or aiming point being well understood and the firing data established, the instructor commands, for example:

1. *Zone fire.*
2. *Common (double common) shell.*
3. **RANGE, 3500.**

The piece is at once loaded and laid for the first round (215, 216), but the firing does not commence until the instructor commands: **COMMENCE FIRING.** At this command the gunner fires the piece and the service of the piece is then carried on continuously until the twelve rounds have been fired, the gunner firing as soon as the piece is loaded and laid and the cannoneers are clear. As soon as the third round at each range has been fired the instructor cautions the new fuse length, in time fire, and the new range.

To avoid mistakes, the ammunition corporal, as he passes each cartridge, calls out the range and the number of the round in the series, thus: *3500, one; 3500, two; 3500, three.*

(Instructor: **RANGE, 3600.**)

3600, one; 3600, two; 3600, three.

(Instructor: **RANGE, 3700.**)

3700, one; 3700, two; 3700, three.

(Instructor: **RANGE, 3800.**)

3800, one; 3800, two; 3800, three.

229. The examples of commands given above as appropriate in volley and zone fire are on the assumption that the firing data have been established by previous fire and that the instruments are set at the readings last used. If this is not the case, or if it is desired to change the data last used, the necessary data are announced in the command. Thus, having fired one

rafale at a target, to fire a second one at the same target with slightly different data, the instructor commands, for example:

- | | |
|--|--|
| <p>(a)</p> <ol style="list-style-type: none"> 1. <i>Volley fire.</i> 2. <i>Four rounds.</i> 3. <i>Deflection, 2 right.</i> 4. <i>Time, 10 seconds, 4 sixths.</i> 5. <i>RANGE, 2800 (226).</i> | <p>(b)</p> <ol style="list-style-type: none"> 1. <i>Zone fire.</i> 2. <i>Deflection, 5 left.</i> 3. <i>RANGE, 3400 (228).</i> |
|--|--|

To change to a new target, the instructor commands, for example:

1. *Change target, that column of infantry.*
2. *Zone fire.*
3. *Deflection, 6 right.*
4. *Time, 9 seconds, 4 sixths.*
5. *RANGE, 2600.*

FIRE AT WILL.

230. This method of fire is used for the close defense of the guns. Time fire is the rule, the fuzes being cut at zero.

231. The instructor commands, for example:

1. *Approaching cavalry.*
2. **FIRE AT WILL.**

The gunner sets the sight at five hundred yards; the fuze is cut at zero; the piece is promptly loaded and laid. But the firing does not commence until the instructor commands: **COMMENCE FIRING.** At this command the gunner fires the piece and the service of the piece is then carried on continuously, the gunner firing as soon as the piece is loaded and laid and the cannoneers are clear, until the instructor commands: **CEASE FIRING,** or until the target disappears from view or actually reaches the gun. In the latter event the cannoneers defend themselves with the pistol.

232. With fuzes set at zero, an elevation corresponding to a range of five hundred yards gives a favorable distribution of the shrapnel bullets. Accurate laying is not essential. Such fire is effective against men up to about three hundred yards from the gun and against animals up to about one hundred yards.

Against a slowly moving enemy the fire should be commenced when he has arrived within about three hundred yards of the gun; against a rapidly moving enemy, when he has arrived within about five hundred yards; the purpose being in both cases to establish a fire-swept zone through which the enemy can not pass.

Fire at a Moving Target.

233. Direct laying is the rule. The instructor commands, for example:

1. *Moving target, that squadron of cavalry.*
2. *Deflection, 6 left.*
3. *Time, 7 seconds.*
4. *RANGE, 2000.*
5. **COMMENCE FIRING.**

The piece is loaded and laid (215) upon the head of the target, or, if the target is moving across the plane of fire, somewhat in front of it; and the gunner fires.

As soon as the piece has been fired the gunner causes the trail to be shifted so as to keep the line of sight directed ahead of the target.

The instructor causes other single rounds to be fired by announcing appropriate changes in the firing data.

234. To employ volley fire or zone fire, the instructor commands, for example:

- | | |
|---|--|
| 1. <i>Moving target, that squadron.</i> | 1. <i>Moving target, that battalion.</i> |
| 2. <i>Volley fire.</i> | 2. <i>Zone fire.</i> |
| 3. <i>Five rounds.</i> | 3. <i>Deflection, 3 left.</i> |
| 4. <i>Deflection, 4 right.</i> | 4. <i>Time, 9 seconds, 4 sixths.</i> |
| 5. <i>Time, 10 seconds, 5 sixths.</i> | 5. <i>RANGE, 2600.</i> |
| 6. <i>RANGE, 2800.</i> | 6. COMMENCE FIRING. |
| 7. COMMENCE FIRING. | |

235. The travel of the target *during the time of flight* involves variations in range and deflection. Corrections in range are not necessary. Corrections in deflection made according to the following rules will be sufficiently exact.

RULE.—If the line of travel of the target makes an angle greater than forty-five degrees with the line of fire, allow two points deflection if the target is moving at a walk; four points

if moving at a trot; six points if moving at a gallop. If the angle lies between forty-five and fifteen degrees, allow one-half the foregoing corrections. If the angle is less than fifteen degrees make no correction.

236. As targets will ordinarily remain exposed to view in the open but a short period of time, great skill in serving the piece and a high order of fire discipline are required to attain quickly an effective fire upon such targets. The squad is accordingly frequently practiced in simulated fire at targets moving at various angles to the plane of fire at different rates of speed. Mounted detachments or any vehicles which happen to appear on the terrain may be utilized for targets. The squad is practiced in getting the gun quickly directed upon a suddenly appearing target, in following its movements, and in keeping up a continuous fire, the instructor prescribing the method of fire and announcing such changes in the firing data as may from time to time be necessitated by the movements of the target.

Service of the Piece with Reduced Numbers.

237. In order to accustom the squad to maintaining the service of the piece when its strength is reduced by casualties in action, the instructor causes certain cannoneers to fall out and assigns their duties to the cannoneers who are retained, as follows:

Cannoneers retained.	Distribution of duties.					
	G.	A. C.	1.	2.	3.	4.
G., A. C., 1, 2, 3	G.	A. C.	1	2	3, 4	.....
G., A. C., 1, 2	G.	A. C.	1, 3	2, 4	.....	.....
G., A. C., 1	G., 2	A. C., 4	1, 3	.....	.....	.....
G., A. C.	G., 1, 2	A. C., 3, 4	.....	.....	.....	.....

CHAPTER IV.—THE FIRING BATTERY. •

SECTION I.—General provisions.

238. 1. *The firing battery* (362-366) comprises the first four sections of the battery of maneuver with the personnel and

animals assigned to their immediate service. It is under the direct command of the captain.

The instruction of the firing battery is carried on both in the battery park and during mounted exercises over all forms of terrain available. In this instruction the captain is assisted by such officers, noncommissioned officers, and men as he may assign for the purpose.

2. The formations, dispositions, exercises, and duties in the service of the piece prescribed for a single squad apply, with obvious modifications, to the firing battery.

3. The guns are placed in line, the material of each section being arranged as prescribed in paragraph 198. The interval between wheels of adjacent pieces is sixteen yards.

4. For instruction of the firing battery in the park, the battery is marched to the park and there formed into gun squads.

SECTION II.—*Duties in general of officers and noncommissioned officers.*

239. Captain: Commands the battery, and, as a rule, conducts the fire.

Senior lieutenants:

1. Command platoons.
2. Supervise the service of their guns.
3. Make sure that the guns are laid on the proper target.
4. Distribute the fire in direct laying, by assigning to each gunner his special part of the target.
5. Make minor changes in deflection so as to bring the points of burst on the target, in direct laying; to their proper relative place in the sheaf, in indirect laying.

Reconnaissance and signal officer:

1. Determines firing data.
2. Supervises the work of scouts and auxiliary observing parties.
3. Assists the battery commander in watching the battlefield and noting changes in the tactical situation.
4. Attends to the maintenance of communication.

Junior lieutenant: Commands the reserve (365).

First sergeant:

1. Assists the captain.
2. Posts the mules when they take position under cover.
3. Keeps the captain informed as to ammunition supply, and takes charge of the removal and replacement of empty ammunition packs.
4. Has general charge of the replacement of casualties.

Sergeants:

1. Command sections.
2. Supervise the service of their guns, watching carefully that sights, quadrants, and fuzes are properly set.
3. The chief of an ammunition section ordinarily has charge of the battery commander's telescope, sets it up, and assists in using it.

Gunners: Perform the duties prescribed in The Cannoneer and The Gun Squad.

Ammunition corporals:

1. Perform the duties prescribed in The Cannoneer and The Gun Squad.
2. Act as relief for gunners.
3. Perform the various duties assigned them as range finders, scouts, etc.

Posts: The specific posts of the various officers and noncommissioned officers are as prescribed in The Battery Mounted (par. 377). During the instruction they post themselves where they can best perform the duties assigned them.

SECTION III.—Methods of obtaining distribution of fire.**Individual Distribution.**

240. Individual distribution is obtained by assigning to each gunner a definite part of the target to attack. Direct laying is always employed.

If the target has clear and well-defined limits, then each chief of platoon, without special indication from the captain, assigns to each of his guns that portion of the target corresponding to its relative position in the battery. He indicates clearly to the gunner the part of the target on which he is to lay.

If the target has ill-defined limits, the captain first explains

to the chiefs of platoon the exact front which the battery is to attack.

241. The right piece is always taken as the directing piece.

SECTION IV.—*Communication of firing data to the guns.*

242. The firing data comprises (244) :

(For direct laying.)

1. The deflection.
2. The fuze setting.
3. The range.

(For indirect laying.)

1. The deflection.
2. The fuze setting.
3. The quadrant elevation.

243. In addition to the firing data, there must be communicated to the guns (244) :

1. The target, or aiming point.
2. The method of laying.
3. The method of fire.
4. The projectile to be used.

244. The foregoing firing data and information will habitually be communicated in the following order:

1. *Indication of target or aiming point, and method of laying.* Thus: "Target, that battery" (Direct laying), or "Aiming point, that steeple" (Indirect laying).

2. *Method of fire.* Thus: "By battery from the right" or "Volley fire."

3. *Deflection.* Thus: "Deflection, 7 right (left)."

4. *Kind of projectile.* Thus: "Time, 6 seconds," indicating "Time shrapnel," or "Percussion shrapnel" or "Shell" or "Double common shell."

5. *Range.* Thus: "Range, 2300," or "Quadrant, 8 degrees."

245. Before the commencement of the fire, the foregoing information, or such of it as is necessary in the particular case, must be communicated to the guns. But during the progress of the fire those elements which are to remain unchanged are not repeated from command to command, except that—

1. In all methods of fire, except *fire at will*, the range is always announced as the indication that all changes in the data have been made, and that the guns should be loaded.

2. In *volley fire* and *zone fire* the command *volley fire* or *zone fire* is given for each rafale; and in *volley fire* the number of rounds is always stated.

246. The firing data and other information may be—

1. Announced as a command.
2. Communicated to the assembled gunners.

247. First: When announced in the command, the elements of the firing data are repeated by the chiefs of platoon, item by item, as they are announced by the captain.

If the target or aiming point cannot be clearly designated in the command, the captain directs: *Chiefs of platoon report.* They hasten to the captain, receive the necessary information, return to their platoons, and, calling their gunners to them, point out the aiming point or that part of the target at which each gunner is to fire.

248. Second: When time admits, the captain directs: *Report for firing data.* The chiefs of platoon and of section and the gunners—the latter carrying their sights—hasten to the captain and form in line facing him in the order of the pieces from right to left, the gunners on the right and left of their chiefs of platoon, the chiefs of section in rear of their gunners. The captain points out the target or aiming point, designates the method of fire, the method of distribution and the projectile to be used, and gives such other instructions as he may desire.

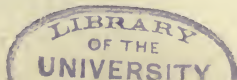
At the captain's command *posts*, the chiefs of platoon and of section and the gunners return to their posts; the instruments are set, and the pieces laid as far as practicable with the information furnished.

The captain may also direct that the pieces be loaded.

249. The captain always gives the command or signal for firing or commencing the fire. If given by word of mouth the command is: *Commence firing.* The signal for firing or commencing the fire is made as follows: Raise the hand to the height of the forehead; then make an energetic gesture of the hand upward and outward, fully extending the arm, and quickly drop the hand to the side.

The captain having given the command or signal for firing, the command of execution, except in the case of salutes, is then given by the chief of section, or the gunner fires, as the case may be.

The chief of section gives the command of execution in *continuous fire* and in all cases of fire *by battery, by platoon, or by piece.* Thus: 1. *No. 1 (or such number), 2. FIRE.*



The gunner fires as soon as the piece is loaded and laid, and the cannoneers are clear, in *volley fire*, *zone fire*, and *fire at will*.

In those cases in which the gunner fires, the chief of section, at the captain's command or signal *commence firing*, cautions "*commence firing*."

In the case of salutes, the captain gives the command of execution. Thus: 1. *No. 1 (or such number)*, 2. *FIRE*.

SECTION V.—*Fire for adjustment and fire for effect.*

250. In general, the fire of the battery comprises a fire for adjustment, followed by a fire for effect.

Fire for adjustment has for its principal object the determination or verification of the firing data.

Fire for effect has for its sole object the destruction of the target.

Fire for Adjustment.

251. The captain adapts his method of adjustment to the circumstances of the particular case with which he has to deal. The nature of the target, the facilities for observation of fire, the possibility of producing great effect by a rapid method of fire, and the husbanding of ammunition, are all considerations which enter into the matter.

Either time or percussion fire may be employed. That kind is generally used which is to be used in the subsequent fire for effect.

The following are the methods of fire usually employed in adjustment:

1. *By battery salvo.*
2. *By platoon salvo.*
3. *By piece.*

252. *By battery salvo:*

The captain commands, for example:

(Direct laying.)

1. *Target, that line of infantry.*
2. *By battery from the right.*
3. *Deflection, 4 left.*
4. *Time, 12 seconds.*
5. *RANGE, 3000.*

(Indirect laying.)

1. *Aiming point, that stone monument.*
2. *By battery from the left.*
3. *Deflection, 9 right.*
4. *Time, 12 seconds.*
5. *QUADRANT, 12 DEGREES.*

The pieces are loaded and laid (215, 216).

As each gunner commands *ready*, his chief of section takes position clear of the piece, facing the captain, the right hand raised.

When the captain sees that all the pieces are ready, he commands or signals: *Commence firing*.

The chief of section on the indicated flank commands: 1. *No. 1 (No. 4)*, 2. *FIRE*.

The pieces are fired in turn from the flank indicated by command of their chiefs of section, the intervals between the shots being about three seconds.

The captain observes the group of bursts and estimates *quickly* the corrections necessary. He makes the necessary corrections in range and height of burst. In indirect laying, he also modifies the direction of the sheaf, so as to cause the fire to be directed upon the target.

The chiefs of platoon, in direct laying, make the changes in deflection necessary to bring the line of fire of each of their guns upon its target, and in indirect laying, to bring the line of fire of each gun to its relative place in the sheaf. If the chiefs of platoon cannot see the burst of shots, the captain makes the corrections in deflection.

253. For succeeding salvos, the captain commands, for example:

(Direct laying.)

1. *Time, 11 seconds, 4 sixths.*
2. *RANGE, 3000.*

(Indirect laying.)

1. *Deflection, 6 right.*
2. *QUADRANT, 12 DEGREES.*

Or, he makes such other corrections as may be necessary. The pieces are loaded, laid, and fired as before.

254. To *shift the sheaf* to the right or left, the captain announces a new deflection.

255. When the fire for adjustment is to be *by platoon* or *by piece*, a platoon or piece is designated for the purpose. Thus: *Right platoon the adjusting platoon*; or *fourth piece the adjusting piece*. In the case of indirect laying, the right platoon or the right piece is usually designated. The pieces which do not take part in the fire for adjustment are kept laid with the firing data last announced, and all preparations are made by them to

take up the fire as soon as the adjustment is completed. Before passing to fire for effect a *verifying salvo* is usually fired by all the pieces which are to take part in the fire for effect.

256. By platoon salvo:

The captain commands, for example:

(Direct laying.)

1. *Target, that machine gun.*
2. *By platoon from the left.*
3. *Deflection, 2 left.*
4. *Time, 9 seconds.*
5. *RANGE, 2500.*

(Indirect laying.)

1. *Aiming point, that smokestack.*
2. *By platoon from the right.*
3. *Deflection, 8 left.*
4. *Time, 9 seconds.*
5. *QUADRANT, 9 DEGREES, 30 MINUTES.*

The pieces of the designated platoon are loaded and laid. As each gunner commands *ready*, his chief of section takes position clear of the piece, facing the captain, the right hand raised. When the captain sees that both pieces are ready, he commands or signals: *commence firing*. The pieces of the designated platoon are then fired in turn from the indicated flank (252).

The captain observes the burst of the shots and announces such changes in the firing data as may be requisite for the succeeding fire.

257. By piece:

The captain commands, for example:

(Direct laying.)

1. *Target, that gun pit.*
2. *Deflection, 0.*
3. *Common (double common) shell.*
4. *RANGE, 2900.*

(Indirect laying.)

1. *Aiming point, that flagstaff.*
2. *Deflection, 0.*
3. *Percussion shrapnel.*
4. *QUADRANT, 11 DEGREES, 30 MINUTES.*

When the designated piece is ready, its chief of section takes position as already prescribed, right hand raised, facing the captain. At the command or signal from the captain, the piece is fired by command of the chief of section.

After observing the burst, the captain announces the necessary changes in the firing data for the next shot.

258. Salvos *by battalion* or *by regiment* may be fired by commands and means similar to those prescribed in paragraphs 252-254.

Fire for Effect.

259. The firing data having been verified to the extent required by the circumstances, the captain passes to *fire for effect*. He employs the method of fire best adapted to the circumstances of the case with which he has to deal.

The usual methods of fire for effect are:

1. Continuous fire.
2. Volley fire.
3. Zone fire.

An exceptional method of fire is:

4. Fire at will.

260. Continuous fire:

In continuous fire the pieces are fired in regular order from one flank of the battery to the other, at such intervals of time as the captain may designate; this order and rate of fire are maintained until the captain orders its cessation.

261. The captain commands, for example:

1. *Continue the fire.*
2. *From the right.*
3. *Interval, 15 seconds.*
4. *RANGE, 2700.*

Each chief of section faces his chief of platoon when his piece is ready, and at the latter's signal gives the command for firing. The chiefs of platoon cause the pieces to be fired in turn from the flank indicated, at the interval given in the command. As soon as fired, each piece is at once loaded, laid, and made ready for the next round.

The captain observes the fire and makes such changes in the firing data as may from time to time be necessary.

262. Volley fire.

A *volley* consists in the discharge by each piece of a specified number of rounds, fired as explained in paragraphs 225-226.

263. To fire a volley, the captain commands, for example:

1. *Volley fire.*
2. *Three rounds.*
3. *RANGE, 3100.*

The pieces are at once loaded and laid for the first round. Each chief of section, as soon as he has satisfied himself that any changes ordered in the firing data have been made, looks toward the captain and, at the latter's command or signal *commence firing*, cautions: *Commence firing*. Each gunner then proceeds to fire the number of rounds specified in the command (225).

264. Subsequent volleys are fired by similar commands and means. If the captain desires to make changes in the firing data from volley to volley, he announces the new data in the commands.

265. If the target has little depth and its range has been accurately determined, several volleys may be fired at this range; the fire is then said to be *by volleys at a single range*.

If, however, the target has considerable depth, or if the range has not been accurately determined, the area within which the target has been located may be searched by progressively increasing or diminishing the range from volley to volley; the fire is then said to be *by volleys at successive ranges*. The range difference between volleys is determined by the captain according to the circumstances of the case; it is usually one hundred yards.

266. Zone fire.

A single rafale of zone fire consists in the discharge by each piece of twelve rounds (227).

267. The captain commands, for example:

1. *Zone fire.*

2. *RANGE, 3000.*

The pieces are at once loaded and laid for the first round.

Each chief of section, as soon as he has satisfied himself that any changes ordered in the firing data have been made, looks toward the captain, and at the latter's command or signal *commence firing*, cautions: *Commence firing*. Each gunner then proceeds to fire the twelve rounds; as soon as the third round at each range has been passed, the chief of section cautions the new range (227-229).

Subsequent rafales are fired by similar commands and means, the captain making such changes in the firing data as he deems necessary.

268. Fire at will.

When this method of fire is ordered, each piece executes a rapid individual fire. Each piece is laid on the part of the target opposed to it.

The captain commands, for example:

1. *Approaching infantry.*

2. **FIRE AT WILL.**

The chiefs of section look toward the captain, and at his command or signal *commence firing*, they caution: *Commence firing*. The gunners then proceed with rapid individual fire (230-232).

Chiefs of platoon and section are careful to see that fuses and sights are properly cut and set.

MOVING TARGETS.

269. The pieces may be directed upon a zone which it is evident the target will have to cross and upon which the fire has been previously adjusted. In this case, they are made ready for firing by volleys or by zone fire, as may be most suitable, the fire being opened at the captain's command or signal *commence firing*, as the target draws near to the selected zone.

270. To adjust the fire upon a target in motion, salvos or volleys are used, depending upon the nature of the target and the speed and direction of its movement. For large, slowly-moving targets, and for all targets moving in or near the line of fire, salvos are, in general, preferable. For targets moving rapidly across the range, volleys may be more desirable.

The salvos or volleys are fired as prescribed in paragraphs 252-257, 262-265.

The fire for effect is by volley fire or zone fire, as may be most suitable.

SECTION VI.—Change of target.

271. A change of target is executed by the battery as explained for a single piece, the new firing data being communicated as in paragraphs 222, 246.

The chiefs of platoon see to it that the pieces are quickly directed upon the new target. If the new target is at such an angular distance from the old as to make firing from the old line dangerous, the pieces are moved by hand under direction

of the chiefs of platoon so as to establish a line normal to the new direction. This movement is generally pivoted on one of the center pieces. As soon as their pieces are directed on the new target, the chiefs of platoon report: (*Such*) *platoon, on the target*.

272. If circumstances require it, the captain may command, for example: 1. *No. 1 (or such number)*, or 1. *Right (or such platoon)*, 2. **CHANGE TARGET**.

In this case only the indicated piece or platoon changes its direction.

SECTION VII.—*Replacement of ammunition.*

273. The ammunition boxes of the firing battery should, if practicable, always be filled before occupying a position.

If a position is prepared for occupation for a considerable time, spare rounds may be brought up from the reserve and stored at suitable places near the guns.

Empty ammunition boxes of the gun sections are ordinarily replaced by filled boxes from the reserve, which are brought up by hand or by ammunition mule as the conditions of cover and other necessity may indicate.

Ammunition mules of the reserve, with empty boxes, are sent without delay to the ammunition column to be reloaded.

Movements are habitually made under cover, if possible, and during lulls in the action.

SECTION VIII.—*Replacement of casualties.*

274. Firing instruction is frequently practiced with reduced personnel, certain officers, noncommissioned officers, and men being directed to fall out as representing casualties in action. If the captain does not give special instructions as to the replacement of these individuals, the following obtains:

The captain is replaced by the senior lieutenant.

A platoon commander is replaced by his senior chief of section.

A chief of section is replaced by a sergeant from the reserve.

A gunner is replaced by an ammunition corporal, or temporarily by his chief of section.

The cannoneers of a gun squad perform additional duties, until cannoneers can be brought up from the reserve (237).

The first sergeant has general charge of the replacement of casualties among the enlisted men, and summons men from the reserve when necessary.

In action, if casualties become excessive, the service of certain guns may be discontinued and the cannoneers sent to assist at others, so as to have at least a gunner and two men for each piece in action. But the piece may be loaded, laid, and fired by one man, and the fire of the battery must not be abandoned as long as there are men to serve any of its guns.

SECTION IX.—*To shelter the personnel from fire.*

275. If the battery is subjected to a very severe fire from the enemy and the circumstances permit temporary suspension of fire, the captain may command: **TAKE COVER.**

The personnel take such shelter as the nature of the ground affords in the immediate vicinity of the position.

When the fire of the enemy slackens or stops, the captain commands: **POSTS,** and the service of the guns is resumed.

* * * * *

PART IV.

MOUNTED INSTRUCTION.

CHAPTER I.—THE SOLDIER MOUNTED.

(See School of the Soldier Mounted, pages 112 to 166, Drill Regulations for Light Artillery, 1896.)

CHAPTER II.—THE DRIVER.

SECTION I.—*Object and sequence of the instruction.*

276. The object of this instruction is the detailed training of the individual drivers:

1. In harnessing and unharnessing and in fitting and properly cleaning and caring for harness.

2. In managing and maneuvering a single mule and in the proper care of pack mules.

3. In managing and maneuvering the different mules of a team.

Quiet, well-trained mules will be used in the instruction of recruits.

277. In order to vary the instruction of recruits, their training as drivers may be advantageously begun as soon as they have had elementary instruction in the duties of the soldier dismounted.

SECTION II.—*General provisions.*

Guides.

278. When two or more elements march in line the instructor, as soon as the march in line has begun, designates the element on one flank or the other as the guide of the movement,

thus: *Guide right (left)*. The other elements align themselves on the guide thus indicated and maintain their intervals from that flank.

Marching in column or obliquely, the guide of the leading element is, without indication, the guide of the movement.

The guide of a pair is, without indication, its near driver.

The guide is responsible that the direction and rate of march are properly maintained.

Intervals and Distances.

279. The interval between mules in pairs is one yard; between mules in line from column of files (300), two yards.

The distance between mules and between pairs is one yard.

NOTE.—Other intervals and distances are given in paragraphs 375, 376.

Rests.

280. The rests are executed and the attention resumed according to the principles laid down in *The Soldier Dismounted*; the drivers remain on the left of and close to their mules so as to keep them in place.

To Stand to Horse.

281. The driver takes the position prescribed for *The Soldier Mounted*, holding the leading rein near the bit in the right hand and the loop of the rein in the left.

SECTION III.—*The individual driver.*

282. Each driver is assigned one mule. In this instruction not more than four drivers are ordinarily assigned to a single instructor.

Disposition of the Pack Harness.

283. The aparejos stand upon the lower edges of their panels with the cruppers doubled forward; upon each rest, in

order, its frame, folded cincha, folded saddle blanket, and corona. The corona is doubled, canvas inside, and lies on the blanket, fold to the front. The bridle, bit to the left, and the blind are laid across the corona or hung on harness pegs.

284. In garrison, the aparejos are aligned upon racks in rear of the mules or in the gun shed. In the field they are aligned parallel to and about five yards from the picket line or close to and on the right of the gun in prolongation of the axle, boot to boot. They should rest on poles and be covered with canvas.

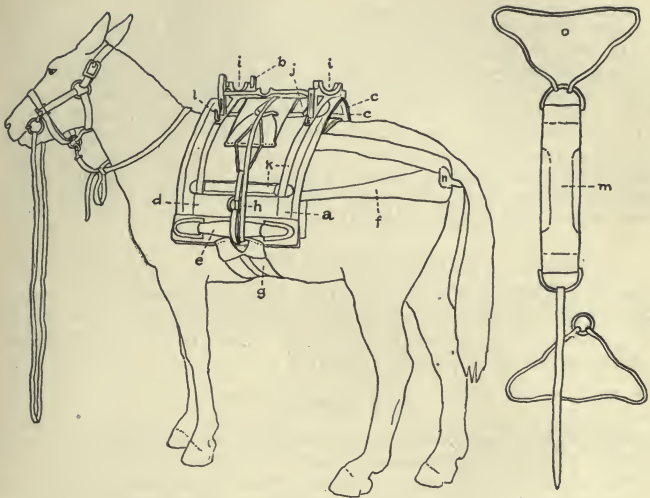
The Aparejo Pack Saddle.

285. The aparejo pack saddle consists of the aparejo proper (*a*) and the detachable frame (*b*) for ordnance packs.

The aparejo proper consists of two panels (*c*) of leather, each braced with light ribs held in place by a boot stick at the bottom and a saddle bar at the top of the panel; the panels are filled with hay, each saddle being fitted to its mule (293). Over the panels is the sobrejalma (*d*) of canvas, leather faced, the ends of which are protected by wooden shoes (*e*) held in place by leather caps; the sobrejalma is secured to the aparejo by thongs at the ends of its center line. To the panels is laced the crupper (*f*). The cincha (*g*) is of canvas, doubled, with a leather cincha strap (*h*) laced to it at one end, which is faced with leather and braced with an iron rod. This strap, at its attachment to the cincha, carries a rendering ring through which it passes in tightening. Fifteen inches from this end of the cincha a leather thong, the finger loop, is attached, which is used to secure the end of the cincha strap after cinching. The other end of the cincha carries a curved piece of pipe which takes the place of a cincha ring. The cincha should be eight inches longer than the aparejo with which it is used.

The frame consists of metal arches (*i*) and side bars (*j*), riveted to spring steel side plates (*k*) for distributing the pressure on the saddle; the arches have hooks (*l*) for side loads; for top loads a cargo cincha (*m*) is used.

Each aparejo is provided with a corona, or pad, made of several thicknesses of blanket, lined with canvas, also a saddle blanket.



APAREJO PACK-SADDLE.

Nomenclature.

- | | |
|------------------|------------------|
| a. Aparejo. | i. Arch. |
| b. Frame. | j. Side bar. |
| c. Panel. | k. Side plate. |
| d. Cover. | l. Hook. |
| e. Shoe. | m. Cargo cincha. |
| f. Crupper. | n. Dock piece. |
| g. Cincha. | o. Lash loop. |
| h. Cincha strap. | |

Each pack-train aparejo is equipped with a lash rope with cincha, of five-eighths inch whale line fifty feet long, and sling rope, of three-eighths inch line thirty feet long, for packing supplies.

To Fold the Blanket.

286. Hold the blanket by the corners, the short edge up and down. Bring the short edges together, the right hand holding the corners, the left holding the folded edge at the top. Shake the blanket and spread it on the ground, the hands still holding the corners. Carry the upper edge to the front so as to leave a portion of the blanket twenty-two inches wide on the ground. Then fold back so as to leave the blanket in three equal folds, twenty-two inches wide and forty-two inches long. Shake well and fold once more, bringing the ends together, and place across the aparejo (283).

To Blind the Mule.

287. A pack mule is ordinarily blinded (290) during harnessing and unharnessing, loading and unloading. To teach it not to move when blinded, the blind must always be lifted before requiring it to change position.

To Harness.

288. The drivers harness and unharness in pairs, the near mule of a pair being harnessed first.

289. A quiet, well-trained mule or pair of mules is assigned to two recruits, each of whom should be supervised at first by a thoroughly instructed man. The instructor causes a mule to be harnessed and points out and names the different parts of the pack outfit and explains their uses. He then has the harness taken off and placed in rear of the mule (283).

290. The pack outfit being in rear of the mule, the instructor causes the recruits to stand to heel and commands: 1. *By detail*, 2. **HARNESS.**

NOTE.—Upon the completion of each detail, the recruits remain in the places that they occupy.

3. BLIND:

The driver of the mule being harnessed, on the near side, takes hold of the halter with the left hand; grasps an edge of the blind near one end with the right hand; carries it over the mules neck to the off side, tail down; brings the blind well to the front over the mule's ears and places it over the eyes, the tail on top of the neck.

4. BRIDLE:

The driver of the mule being harnessed, on the near side, passes the reins over the mule's head, snaps the hook of the watering bridle into the off halter ring with the left hand; opens the mule's mouth with the thumb of the right hand, inserts the bit, and snaps the hook in the near ring; secures the leading rein in the throat latch.

5. CORONA:

The off driver on the off side places the corona, canvas side down, well forward on the mule's back and slides it to the rear until its front edge is just behind the point of the withers, taking care that the hair lies smooth beneath it.

6. BLANKET:

The near driver on the near side places the folded saddle blanket on the corona, taking care that its lower edges slightly overlap to prevent bunching, the off driver assisting from the off side.

7. SADDLE:

The near driver on the near side grasps the front edge of the aparejo near the boot with his left hand, the rear edge near the boot with his right hand; the off driver on the off side grasps the aparejo in a corresponding manner; both together raise the aparejo, pass it over the mule from the rear and place it in its proper position.

8. CRUPPER:

The near driver on the near side places his left hand, palm up, on the front edge, the right hand, palm down, on the rear edge of the crupper; the off driver on the off side takes a corresponding position; both together raise the crupper well up, reverse it and turn it down over the croup. The off driver raises the mule's tail and places the dock piece well under it, taking care that no hairs are caught. He then places his left hand, thumb down, at the top and rear of the aparejo, his right hand at the rear of the boot, and moves it forward to its place. The near driver on the near side throws the upper fold of the cincha toward the off driver, guiding the cincha to the center of the aparejo with the left hand. The off driver passes the cincha well under with his right hand, holding it in position over the center of the off side boot until it has been received by the near driver. He then steps to the mule's shoulder and facing to the

rear places his right hand on the collar of the aparejo, thumb under the corona, and with his left hand at the rear of the boot, pulls the aparejo forward.

9. **CINCH:**

The off driver holds the aparejo in place, raising the corona from the withers with his right thumb, taking care not to raise the front of the aparejo. The near driver holds the end of the cincha with his left hand, passes the double cincha strap through the cincha eye from above, brings it up in front and passes it through the rendering ring from above; grasps the double cincha strap with the left hand well under and with the right hand passes the end through the eye in rear of the other part; places the palm of his right hand against the rear end of the boot, pulls the strap taut with his left hand, and calls *set*. At this the off driver passes in rear and observes whether the aparejo is straight. If not, it is correctly adjusted. He then takes hold of the cincha strap between the near driver and the mule, the palm of the right hand up, that of the left hand down, and places his right knee against the boot. The near driver raises his left foot to the boot and both pull together until the cincha eye is at the edge of the boot, the cincha in the center of the aparejo. The near driver holds the cincha strap with his left hand below his right, and passes the end to the off driver on the off side, who passes it through the finger loop from above and back into the right hand of the near driver, who secures it. The driver of the harnessed mule removes the blind and places it on his left shoulder with the tail under the right arm.

To harness the off mule the detailed commands are repeated and executed as just explained.

To harness without detail: **HARNESSES.**

To Unharness.

291. 1. By detail, 2. UNHARNESSES.

NOTE.—Upon the completion of each detail, the recruits remain in the places that they occupy.

3. **BLIND** (290).

4. **UNSADDLE:**

The near driver on the near side unfastens the cincha strap and throws its end across the aparejo; folds the cincha with

the strap inside and places it on top of the frame. Both drivers push the aparejo slightly to the rear. The near driver places his left hand on the upper edge of the crupper, his right on the lower edge near the dock piece; the off driver takes a corresponding position; both together raise the crupper and reverse it forward over the cincha; take hold of the aparejo as in saddling, pass it backward over the mule, and lower it carefully to its place in rear.

5. **BLANKET OFF:**

The near driver on the near side grasps the front and rear edges of the blanket at their middle points, removes it, allows it to fall into a fold between his hands, places it along the near side of the corona, grasps the corona at the middle points of its front and rear edges, removes it, and places both on the aparejo (283).

6. **UNBRIDLE:**

The driver of the mule being unharnessed removes the watering bridle in the reverse order of bridling (290) and places it and the blind on the corona.

To unharness the off mule the detailed commands are repeated and executed as just explained.

To unharness without detail: **UNHARNESS.**

292. All recruits are instructed in the duties of both near and off drivers.

To Set Up the Aparejo.

293. (1) To rib up: Unlace the slits and handholes; soak the aparejo in tepid water for about fifteen minutes, drain it and lay it flat, back pieces up; insert the boot stick and the saddle bar through the slit in rear and press them to their places at the boot and the center stitch line, slotted sides up; insert the numbered set of nine ribs through the slit in rear in their numerical order and seat them in that order from collar to rear in the slots of the boot stick and saddle bar, butts at the boot; secure the top of each rib as it is seated by inserting the key bar at the front edge below the collar and passing it over the rib in place; fasten the key bar to the collar by the thong.

NOTE.—Aparejos are issued to the service with ribs in place. Ribs are furnished in sets of nine. Each rib is numbered at its butt to correspond to its proper numerical position in the panel,

counting from the collar to the rear. Each rib is also stamped with the size of the aparejo for which it is made. The aparejos are furnished in fifty-eight, sixty, and sixty-two inch sizes. The ribs for a sixty-inch aparejo are therefore marked 1-60, 2-60, 3-60, etc. Should repairs or alterations make it necessary to rib up, the butt of the fifth rib is seated in its slot, the overlap at its slot in the saddle bar is marked and cut away, and the other ribs are cut to the exact resulting length.

2. *To fill or pad:* Turn the aparejo over, belly pieces up; procure about six pounds of long, fine, soft, elastic hay; taking a little at a time, tease or "mix" it thoroughly, insert it through the handhole and thus gradually fill the body of the aparejo with a smooth and even layer, not more than two inches thick.

NOTE.—Other filling may be used in necessity such as moss, excelsior, curled hair, sea grass, but these substitutes are difficult of manipulation in alterations necessary to accommodate the rigging to injuries of the mule. By teasing or "mixing" is meant the arrangement of the straws so that they will cross one another. The body of an aparejo is that part which comes in contact with the body of the mule. As three inches of the lower portion of each boot stick and three inches of the upper portion of each saddle bar must not come in contact with the mule, no filling should be pressed under the boot stick or within three inches of the center stitch line. The body course tapers, however, so as to overlap the boot stick and saddle bar, and also tapers toward front and rear.

3. *To face up or dress:* To adjust the aparejo more accurately to the shape of the mule, introduce filling and press it well into the corner of the front boot; working toward the handhole, continue the facing along the boot stick and front edge, gradually increasing its thickness to about an inch at seven inches from the corner and forming its inner edge into the arc of a circle concentric with the handhole, the thickness tapering to the ends of the arc; continue the facing for three inches more toward the handhole, rapidly decreasing the thickness to nothing; proceed in exactly the same way at the collar. Under no circumstances should the collar facings reach within seven inches of the center of the handhole. Connect the front boot and collar facings by a dressing along the front edge about three inches wide and an inch thick, decreasing in thickness toward the handhole and toward the middle of the edge.

Rib up, fill, and dress the other panel in the same manner.

NOTE.—In facing up, introduce the filling with the hand, palm up, so as not to disturb the body course. In case the leather will not yield enough to permit the filling to be introduced well into the corners, the tamping stick may be used to raise it. This stick, used with the commercial aparejo, is four or five feet long, one and one-fourth inches in diameter, wedge shaped for four inches from one end, the edge of the wedge being about one-fourth inch thick and grooved. The object of the boot facing is to cause the boot stick to carry horizontally and parallel to the center line of the mule and give free action to the mule's elbow. Mules of large barrel will require a thicker facing than that described. The object of the collar facing is to cause the saddle bar to carry horizontally and parallel with the center line of the mule and to protect the mule's withers. Mules with high withers will require a thicker facing than that described. In setting to the shape of the mule the aparejo bends at the middle of the front edge. It is important that the body course remain undisturbed during dressing and that the instructions given be carefully followed to avoid sore withers and tails and body and belly bunches.

4. *To attach the crupper:* Stand the aparejo on its boot in its normal position; secure a lace thong to the front hole on the upper facing of the crupper on each side and fasten the crupper with short thongs to the center holes of the carrier pieces on the rear of the aparejo; pass the crupper lace thong through the second hole from the top of the front facing of the aparejo, through the second hole of the crupper, through the third hole of the aparejo facing, through the fourth hole of the crupper, and so on, finishing through bottom holes of facing and crupper and tying to the crupper hole.

NOTE.—In lacing the crupper to the aparejo, the thong must be passed through the holes from the outside and must not be twisted, the lacing must not cross, and it is important that the tie be made on the last hole of the crupper instead of the aparejo.

5. *To assemble the saddle:* Place the sobrealma on the aparejo so that its staple holes fit over the staples on the latter; seat the frame and pass the straps on the sobrealma through the staples; pass the cincha through the frame over the side

bars, finger loop up and cincha to the left; double the cincha over the frame, strap inside; double the crupper forward so that the dock piece rests on the cincha (283, 285, 286).

NOTE.—Guava, willow, dogwood, hickory, or any other wood combining the qualities of permanent elasticity and strength may be used to replace broken ribs.

When the set up parejo is to be filled, no soaking is necessary; instead, make the belly pieces pliable by rubbing with a wet sponge.

Mules weighing eight hundred and fifty to nine hundred pounds require a fifty-eight-inch aparejo; one thousand pounds, sixty-inch; one thousand one hundred pounds, sixty-two-inch; for heavier mules requisition should be made for larger sizes.

When the mule is loaded the cincha, in travel, should free the elbow by about an inch; more than this will prevent a proper grip on the belly.

If the boots ride high on the body of the mule, or if they reach under the belly, even though they ride horizontally and parallel to the center line of the mule, the aparejo will be likely to turn easily. This fault encourages injuriously tight cinching.

If one or both boots flare out or turn in toward the mule, cinch sores and sore tails result, or belly and body bunches are caused.

The width of the collar arch clearance should be at least five and one-half inches. If it is too narrow or too wide, or if the saddle bars slope downward toward the front, there will be sores on the withers; if they slope to the rear there will be injuries over the loins called kidney sores.

If the lacing of the crupper is drawn too tight at the bottom the lower edge of the crupper will rub the buttocks and cause abrasions.

The object to be attained is the uniform distribution of the weight of the load over that portion of the mule's body, anatomically suited to carrying a burden, so that the saddle will ride with little motion and without friction of the bearing surface of the body. The contact of the bearing surface of the saddle must be close at all points. As the mule's body swells from front to rear, the more or less cylindrical shape of the aparejo after the body course is laid must be modified by facing

up so as to provide a concave surface to fit over a convex surface. But as the barrel of the properly conformed mule is nearly cylindrical through the rear half or more of the contact surface, no facing is necessary, as a rule, in the rear part of the aparejo, although conformation may require it exceptionally.

Care of the Harness.

294. The leather parts of the harness should be exposed to the sun as little as possible and should be cleaned whenever dirt, grit, or dust has collected on them or when they have become saturated with the sweat of the animal. The parts should be separated and each sponged with a lather of castile soap and warm water. They should then be rubbed nearly dry and a lather of Crown soap and warm water should be applied. Excess of moisture in this lather should be permitted to evaporate in a shaded place. This treatment frequently applied is sufficient, but if the leather has become harsh and dry, its dressed side should be lightly coated with neatsfoot oil after the castile lather and allowed to dry before the Crown soap lather is applied, the latter removing surplus oil. Polishing of the leather parts should not be permitted as it leads to the surreptitious use of commercial materials that are often detrimental to the life of the leather.

Leather is injured by exposure to the sun, by water, and by the use of too much Crown soap or of common commercial soaps. In proper condition it is clean, soft, smooth, pliable, and free from stains.

Immediately after the harness is removed from the animal, canvas parts should be scraped free from all adhering substances with a dull but smooth edged knife. Especially constant attention must be given to the cleanliness and pliability of the canvas side of the corona and crupper and to the dock piece.

Woolen parts and hair cinchas should be rubbed between the hands or hung up and beaten with switches or wands to remove dust, mud, and hairs and to make them soft and pliable. They should be exposed frequently to the sun, completely unfolded, and blankets should be occasionally washed in tepid water.

Metal parts must be kept free from rust, dirt, sweat, and hair. Those issued with coats of paint or lacquer are to be maintained in that condition. Bright parts should be polished. The tongues, rollers, and keepers of buckles must work freely, to which end the straps must be unbuckled in cleaning.

All battery officers attend and supervise the cleaning at stated times.

To Lead Out.

295. LEAD OUT.

The mules are led out and formed in line at two yards interval at the place designated.

To Gather the Mule.

296. Standing to horse, the driver raises his right hand to attract the attention of the mule, collect him and prepare him to move.

Management of the Led Mule.

297. The led pack mule is managed by the leading reins. By quiet and gentle treatment he must be taught to work and to effect changes of gait and direction evenly. He should not be turned short but on the arc of a circle of one yard radius. He should be led with a loose rein, urged on, if he lags, by the driver in rear. He should not be faced or threatened by his driver. The mule must always be gathered (296) before moving from a halt, before halting, and before changing gait or direction.

MARCHINGS.

To March to the Front.

298. 1. Forward, 2. MARCH.

Each driver leads his mule straight to the front, being careful to maintain his proper relative position in the formation.

To Halt.

299. Being in march: 1. Drivers, 2. HALT.

Each driver halts his mule, but not suddenly, and keeps him straight.

*To March by the Flank.***300. 1. Drivers by the right (left) flank, 2. MARCH.**

Each driver wheels his mule to the right by moving him over a quarter circle whose radius is one yard. On completion of the wheel each driver leads his mule straight to the front in the new direction.

If executed from line with intervals of two yards, the mules are in column of files; each driver leads his mule in the track of the preceding mule.

If executed from column, the mules are in line; each driver aligns his mule toward the guide and takes his interval (279) from his flank.

*To March to the Rear.***301. 1. Drivers right (left) about, 2. MARCH.**

Executed as explained for the march by the flank (300), except that each driver moves his mule over a half circle instead of a quarter circle.

*To March Obliquely.***302. 1. Drivers right (left) oblique, 2. MARCH.**

Executed as explained for the march by the flank (300), except that each driver moves his mule over an eighth of a circle instead of a quarter circle. During the oblique march the drivers maintain their relative positions with respect to each other, so that on executing another oblique they will be in line or column, as the case may be, with proper intervals or distances.

*To Change Direction in Column.***303. 1. Column right (left), 2. MARCH.**

The leading driver marches by the flank; the other drivers march squarely up to the wheeling point and execute the change of direction on the same ground.

Column half right (half left) is similarly executed, the change of direction being forty-five degrees instead of ninety degrees.

To Rein Back.

304. Being at a halt: 1. *Backward*, 2. *MARCH*, 3. *Drivers*, 4. *HALT*.

The mules are reined back evenly and kept straight. This movement is used only for the purpose of moving the mules a few steps to the rear.

Alignments.

305. Being in line at a halt, the instructor sees that the driver on the side toward which the alignment is to be made is in the desired position and commands: 1. *Right (left)*, 2. *DRESS*, 3. *FRONT*.

At the command *dress*, the other drivers look to their right and align themselves accurately, keeping their mules straight and preserving their intervals. At the command *front* they turn their eyes to the front.

The instructor may place himself on either flank and give a general alignment by ordering any driver to move his mule forward or backward.

Care of the Pack Mule.

306. In order that injuries and sickness may be avoided or promptly discovered and cured the animals are carefully inspected by their riders and drivers immediately after they are unsaddled, and the results are reported to their immediate superiors, who also inspect to see that this duty is efficiently performed. Such correction or treatment as is practicable is applied at once and difficult or serious cases are reported to the stable sergeant.

307. Mounted men and drivers report abrasions, lumps, bunches, swellings, punctures, rope burns, discharges from eyes, nose, and mouth, unusual conditions of urine and dung, lameness, loose or cast shoes, failure to feed properly, cases of fatigue, in short, everything, whenever noticed, indicating the existence of disease or injury or need of correction.

308. Bunches under the aparejo are caused by the sudden relief of excessive pressure on a part of the body. They are treated by a modification of the filling, so as to relieve partially

the pressure on the part under the load, by massage and by the application of pads, saturated with cooling lotions, held in place by bandages, cinchas, or surcingles. The sooner the mule is worked under a load with the aparejo properly modified the sooner the bunch will disappear. To determine the location of the fault in the aparejo the face of the bunch is wet with water and the aparejo is placed in its correct seat without corona or blanket, the crupper turned forward, and gently rocked from side to side. Upon removal a damp spot on its inner surface will indicate where the filling should be carefully removed without disturbing the remainder.

Swellings may also be caused by the exposure of heated surfaces to drafts and by the folding of the skin under the cincha.

309. Sores and abrasions may be caused by the presence of foreign substances, such as burrs or gravel, and by inequalities or wrinkles in corona, blanket, or cincha. Sores under the crupper and dock piece result from the aparejo riding too far forward or because the boots are too close to the animal's body or do not carry horizontally or parallel to the axis of the mule. Abrasions of the withers or loins indicate that the saddle bars are not horizontal or that they are not parallel to the axis of the mule or that the arches are too broad or too narrow (293).

Abrasions are treated by the temporary removal, if possible, of the surfaces in contact and by the application of antiseptic, cooling, and healing powders and lotions.

310. In general, swellings are caused by pressure inequalities and sores by friction. They can be avoided only by correct setting-up of the aparejo, its proper fitting, and its modification to conform to changes in the condition of the animal. Very tight cinching, instead of correcting bad adjustment, causes swellings, pain, fatigue, and excessive sweating, and makes the animal unruly and hard to manage in its effort to get rid of the load (293).

To Dismiss the Drivers.

311. The instructor may conduct the drivers in column into the stable and halt the column so that each driver is opposite his stall; or he may first form the drivers in line in the vicinity of the stable or park, and command: 1. *By the right (left)*, 2. *FILE OFF*. In the latter case the drivers file off in succession,

as explained in The Soldier Mounted, and halt when opposite their stalls or the place designated for unharnessing.

The instructor gives the commands for unharnessing (291).

The harness is removed, cleaned, and properly put in place; the mules rubbed down and cared for. Having satisfied himself by inspection that these duties have been properly performed and that all the precautions required on return from exercise have been observed, the instructor causes the harness to be covered, orders the men to *fall in*, marches them to the battery parade ground, and dismisses them.

SECTION IV.—*The team packed.*

312. The drivers, being well instructed individually in the management of the led pack mule, are further instructed in their duties as drivers in a team packed.

313. The mules assigned to the transport of a gun are termed collectively a *gun team*; to the transport of the ammunition attached to a single gun, an *ammunition team*. They are also designated individually, according to the packs they carry, as *cradle, trail, wheels, gun, ammunition mules*: the ammunition mules of a team are further designated numerically as *first* (*second*, etc.) *ammunition mule*, from front to rear in their assigned positions in the team in column of files.

314. The instruction is described for teams packed, a temporary section of two teams being considered, but it is applicable to a single team or to several sections, packed or unpacked.

315. Training with teams packed is regarded as the rule, but conditions may make it desirable to have drill with the teams unpacked.

316. When two or more mules are led singly, each following in the trace of the one preceding, the formation is called a *column of files*.

317. When mules are led by twos abreast, each two following in the trace of the two preceding, the formation is called a *column of pairs*.

318. The teams of a section are said to be in *section column* when one team marches in the trace of the other at a distance of one yard in column of files or of seven yards in column of pairs.

To Lead Out.

319. The teams being harnessed, the instructor designates the place and order of the formation and commands: **LEAD OUT BY TEAM.** The teams are led out in turn and formed. If they are to be packed at once and the park is near by, they may be led directly to the park.

To Post the Teams With Their Pieces.

320. The teams are marched to the park in *column of pairs* so as to approach the rear of the guns. As the head of the column nears the park the instructor commands: **TEAMS TO YOUR POSTS.** Each team, as it comes opposite its gun, wheels from the column and halts directly in rear of it, the heads of the leading pair ten yards from the trail spade (345).

Packing and Unpacking.

321. The drivers are practiced in their duties in packing and unpacking (350-356), cannoneers being posted with the pieces for handling the loads.

MARCHING IN COLUMN OF FILES.*To March to the Front.*

322. The commands and the execution are as in paragraph 298.

To Halt.

323. The commands and the execution are as in paragraph 299.

*To March by the Flank.***324. 1. By the right (left) flank, 2. MARCH.**

Each *team* executes *column right* (278, 303). If executed from section column the teams are in *flank column* after the movement is completed (331). If executed from flank column, the teams are in section column (318) after the movement is completed, and the rear team at once takes its trace and distance from the leading team.

To March to the Rear.

325. By an about: 1. *Right (left) about*, 2. **MARCH.**

The leading driver of each team wheels his mule about (301), the other drivers following and executing the about successively on the same ground. The rear team at once takes its trace and distance from the leading team.

326. By a countermarch: 1. *Countermarch*, 2. **MARCH.**

The leading team executes a left about (325), the rear team following and executing the about on the same ground.

To March Obliquely.

327. 1. *Right (left) oblique*, 2. **MARCH.**

Each team executes column half right (303), and both teams march on parallel lines, the leading drivers regulating their march so that, upon executing a second oblique, they will have their proper relative positions in line or column.

Movements by Driver.

328. To gain short distances, the drivers may be marched by the flank, to the rear, and obliquely, or the mules may be reined back by the commands and means in paragraphs 300-304.

To Change Direction.

329. 1. *Right (left) wheel*, 2. **MARCH.**

In section column the leading team executes *column right* (303), followed by the other team on the same ground; in flank column, the pivot team executes *column right* and the other team takes a slow trot, preserving its interval from the pivot team and resuming the walk upon arriving abreast of it.

330. The *right (left) half wheel* is similarly executed.

To Form Flank Column from Section Column.

331. 1. *Flank column*, 2. *Right (left) oblique*, 3. **MARCH.**

The leading team advances twelve yards and halts. The rear team obliquely to the right, moves forward and halts abreast of the leading team at an interval of eleven yards (324).

*To Form Section Column to the Front from Flank Column.***332. 1. Piece (ammunition) front, 2. MARCH.**

The designated team marches straight to the front; the other team obliques toward the designated team in time to follow in its trace at one yard distance. If executed while marching, the designated team maintains its gait; the other team halts and resumes the march in time to follow the movement.

*Passage of Teams.***333. Being in section column, to place the rear team in front: 1. Piece (ammunition) front, 2. MARCH.**

The team designated is the rear team in the existing formation. It inclines to the right, passes the other team, takes position in front of it, and continues the march; the team then in rear follows at one yard distance. If executed while marching, the designated team maintains its gait; the other team halts and resumes the march in time to follow the movement.

*To Form Column of Pairs.***334. 1. Form pairs, 2. MARCH.**

The leading driver of each team halts his mule, or remains at a halt; the second driver obliques to the left and halts his mule abreast of the leading mule at one yard interval; the other drivers lead forward and form pairs successively in rear of the leading pair, at a distance of one yard in the same manner (376).

MOVEMENTS IN COLUMN OF PAIRS.

335. The section in column of pairs executes all movements laid down for the section in column of files (322-333) on the principles described, with the following exceptions: (1) The distance between teams in section column is seven yards; (2) the interval between teams in flank column is nine yards; (3) the movements by driver in paragraph 328 are omitted.

*To Form Column of Files.***336.** 1. *By driver*, 2. **MARCH.**

The off driver of the leading pair of each team marches straight to the front; the near driver obliquely to the right so as to follow in the trace of the off driver; the drivers of the other pairs follow successively in the same manner. If executed while marching, the drivers of the leading pairs continue the march, the near driver modifying his gait; the other pairs halt and resume the march in time to follow the movement.

CHAPTER III.—THE SECTION.

SECTION I.—*Composition.*

337. A *gun section* consists of a mountain gun and its ammunition with its complement of men, saddle animals, and transport mules and its equipment. Its personnel and animals are as follows:

The chief of section, a sergeant, mounted.

A gun squad (178, 179), the ammunition corporal, mounted.

A gun team of four pack mules and four drivers, privates (313).

An ammunition team of four pack mules and four drivers, privates (313).

338. An *ammunition section* consists of two ammunition teams (337), an ammunition squad (180), the ammunition corporals mounted, and a chief of section, a sergeant, mounted.

The leading team in each ammunition section in the normal order in park is the *first ammunition team*; the other is the *second ammunition team*.

What is prescribed for gun and ammunition teams of gun sections is applicable to first and second ammunition teams, respectively.

339. The personnel of the section is instructed in the combined duties of cannoneers and drivers in packing the piece and ammunition for transport and in preparing for action.

SECTION II.—*Formation.*

340. The habitual formations are:

The order in section column.

The order in flank column.

The order in battery.

Order in Section Column.

341. Section column (318) is the habitual formation of route and maneuver.

For marching over trails and close or difficult ground, the *section column of files* (316) is used; over roads and open ground, the *section column of pairs* may be used (317).

Column of Files.

342. Marching at attention the chief of section is on the left and abreast of the leading mule of the section at an interval of one yard. The ammunition corporal, if mounted, is on the left and abreast of the leading mule of the ammunition team at an interval of one yard, except that when the ammunition is in front he is abreast of the second mule; if dismounted, he is on the right of the column at one yard interval from the middle of the fourth ammunition mule. The even-numbered cannoneers are on the left of the column, the gunner and odd-numbered cannoneers on the right, all at one yard interval from the middles of the mules, as follows: No. 1 of the cradle mule, No. 2 of the wheels mule, No. 3 of the trail mule, No. 4 and the gunner of the gun mule, Nos. 5, 6, 7, and 8 of the first, second, third, and fourth ammunition mules, respectively.

Marching at route order the distances may be increased, when necessary, so as to allow the personnel to march in the column, the chief of section at its head, each driver marching in front and each cannoneer in rear of the mule with which he is normally posted, except that the gunner follows No. 4 and that the ammunition corporal, if mounted, marches at the rear of the section to keep the column closed, or, if dismounted, follows No. 8.

Column of Pairs.

343. *Marching at attention* the chief of section is on the left and abreast of the leading pair of the leading team, at an interval of two yards. The ammunition corporal, if mounted, is on the left of and abreast of the leading pair of the ammunition team at an interval of two yards, except that when the ammunition is in front he is abreast of the second pair of the team; if dismounted he follows No. 7 at a distance of one yard. The other members of the gun squad march as in column of files, except that the gunner follows No. 3 at a distance of one yard.

NOTE.—If it be desired to narrow the front of the column the instructor may command: 1. *Cannoneers*, 2. *REAR*. Nos. 1, 2, 3, and 4 form in rear of the gun team, Nos. 5, 6, 7, and 8 in rear of the ammunition team, in double rank, the lowest numbers of each squad in the front rank, the highest numbers in the rear rank, all in numerical order from right to left, the gunner and ammunition corporal, if dismounted, on the right of the front ranks, respectively. The chief of section and the ammunition corporal, if mounted, are one yard in front of the off mules of the leading pairs of the gun and ammunition teams, respectively. To resume the normal order: *POSTS*.

Marching at route order the personnel of each team, except the drivers, may be permitted to march in rear of it.

Flank Column.

344. The teams, each in column of files or of pairs, are in line (324), the personnel are as in section column (342, 343). The post of the chief of section is with the gun team.

In Battery.

345. The piece is assembled (198); the cannoneers are at their posts (192); the teams are in section column of pairs (343), covering the gun, the leading pair of the gun team at ten yards distance from the trail spade and the ammunition teams at one yard distance from the gun team; the chief of section is four yards in rear of the center of the ammunition boxes.

SECTION III.—*Packing.**Transport.*

346. The animals provided for packing the piece and its ammunition are as follows:

Gun team.—First mule: Cradle with tompons and cleaner; tool box with tools and spare parts; one lifting bar on each side.

Second mule: Wheels with linch pins and washers; axle; drag ropes; brake ropes; sponge staff.

Third mule: Trail; handspike on near side; long lifting bar on off side.

Fourth mule: Gun complete with breech and muzzle covers; a lifting bar on near side.

Ammunition team.—Four mules, each carrying twelve rounds of shrapnel, common shell, or canister, one of which may be replaced by a can of buffer oil or ten rounds of double common shell.

The amount, character, and distribution are varied according to circumstances.

GENERAL INSTRUCTIONS.*Drivers.*

347. A restive mule should be blinded (290) during packing and unpacking.

Before packing, the saddle must be secure in its correct position, the arches clear, and the lashings free.

After unpacking, the harness should be adjusted, if necessary, and the lashings conveniently arranged for repacking.

For packing and unpacking, mules are posted at the trot. The walk is the habitual gait for packed mules, however, and will not be exceeded except for urgent reasons or where specially directed and then only for short distances.

At the command *heave*, in unpacking, the blind is removed and the mule is promptly led clear of the pack and directly to its post in battery (345).

When it is not intended to carry loads, mules should not be tightly cinched.

A packed mule is best kept moving. At halts of sufficient duration the load should be removed; at longer halts the cincha should be loosened; but only at extended halts should the mule be unharnessed.

Cannoneers.

348. Cannoneers should move quietly about the mule and should be careful not to strike it with any part of the material.

Except while carrying parts, they move at the double time.

At the command *heave*, always given by the gunner or by the lowest numbered cannoneer engaged in the detail being executed, in packing, all together raise the part so as to clear the mule's rump and place it on the frame; in unpacking, all together raise the pack clear of the frame, and at the command *down*, given after the mule is led clear (347), they lower the part and assemble it at the piece.

Disposition of the Section.

349. The section being in the order in battery (345), the piece may be packed to the front, rear, right, or left.

The direction in which the piece points is the front of the section and establishes the formation of the teams before and after packing.

*To Pack Piece and Ammunition.***350. 1. By detail, prepare to pack.**

The gunner removes the trail handspike and the drivers post their mules at the piece as follows:

Gun team.—Cradle mule two yards in front of the muzzle, facing to the front.

Wheels mule two yards in front and one yard to the left of the left wheel, facing to the left oblique.

Trail mule two yards to the front and one yard to the right of the right wheel, facing to the right oblique.

Gun mule one yard in rear of the trail spade, facing to the rear.

Ammunition team.—Leading pair one yard in front of the ammunition, facing to the front; the other pair one yard in rear, facing to the rear.

To reach the positions prescribed, the cradle and trail mules pass by the right of the piece, the wheels mule by the left, and the gun mule moves forward and by a left about. The leading pair of ammunition mules moves by the left of the ammunition, the other pair by the shortest practicable route.

The cannoneers take post as in dismounting the piece (205) and perform the same duties with the exceptions indicated.

2. GUN:

When No. 5 calls *heave*, the gun is placed on the gun mule; No. 5 throws the long bar on the ground at the right of the trail; receives the load cincha from No. 6 and cinches while No. 6 steadies the load; No. 7 secures the lifting bar (346) between the load cincha and the saddle.

3. CRADLE:

When No. 1 calls *heave*, the cradle is placed on the cradle mule, the bars being left in the rings; the cradle mule is led forward five yards as soon as the cradle is in the frame, No. 3 steadying it; No. 4 receives the load cincha from No. 3 and cinches while No. 3 steadies the load; Nos. 3 and 4 secure the tompons, cleaner, tool box, and lifting bars (346).

4. WHEELS:

When No. 6 calls *heave*, the wheels are placed on the wheels mule; No. 6 places the axle and sponge staff on the frame, No. 5 the dragropes; Nos. 7 and 8 place the drag washers and lynch pins on the wheel hangers and lash the wheels if necessary; all go to the ammunition.

5. TRAIL:

No. 1 passes the long bar through the front trail handles to No. 2; the gunner alone or No. 3 and the gunner grasp the rear trail handles; the gunner calls *heave*, and all working together place the trail on the trail mule; No. 2 receives the cincha from No. 1 and cinches while No. 1 steadies the trail; No. 3 secures the handspike and No. 4 the long bar (346).

6. AMMUNITION:

Nos. 5 and 6 pack the leading pair of ammunition mules, Nos. 7 and 8 the other pair, other cannoneers assisting as they become available.

7. POSTS:

Section column of pairs is formed on the cradle mule by moving the trail and wheels mules to the front, the gun mule by a right about; the leading ammunition pair makes a left about, marches to the rear and takes its place by a left about; the other pair marches to the rear and takes its place by a left about. The cannoneers take their posts (343).

351. To pack the piece to the front without detail: **PACK.**

The piece is packed and the section formed as already explained (350) without further command.

352. To pack the piece to the rear (right or left) by detail: 1. *By detail, prepare to pack rear (right or left)*, 2. **GUN**, etc.; or, without detail: 1. *Rear (right or left)*, 2. **PACK**.

Executed as just explained (350, 351) except that the piece is pointed to the rear or run forward three yards and pointed to the right or left before the mules are posted for packing (349).

To Unpack Piece and Ammunition.

353. 1. *By detail, prepare to unpack.*

The trail mule halts, or stands fast; the cradle mule advances one yard and halts; the wheels mule is disposed with respect to the cradle mule as in packing (350); the gun mule moves by a left about, a left wheel and a right wheel and halts, faced to the rear, one yard in rear of the trail mule; the ammunition mules are posted, by the shortest practicable routes, as in packing; the gunner and Nos. 1, 2, and 3 take post at the trail mule, No. 4 at the cradle mule, Nos. 5, 6, 7, and 8 at the wheels mule.

2. **TRAIL**, 3. **WHEELS**, 4. **CRADLE**, 5. **GUN**, 6. **AMMUNITION**.

The mules are unpacked in the reverse order of packing (350), the same cannoneers handling the different parts, implements, and cinchas, and calling *heave*, to raise the parts from the frames, at which command the driver leads his mule to its post (345, 347), and *down* when the mule is clear.

The ammunition being unpacked, the cannoneers take their posts at the piece (192).

354. To unpack the piece to the front without detail: **UNPACK**.

The piece is unpacked and the section formed as already explained (353), without further command.

355. To unpack the piece to the rear (right or left) by detail: 1. *By detail, prepare to unpack rear (right, left)*, 2. **TRAIL**, etc.; or, without detail: 1. *Rear (right, left)*, 2. **UNPACK**.

Executed as just explained (353, 354), except that after the gun is assembled it is pointed in the indicated direction, and that the ammunition mules are unpacked and all unpacked mules are posted in relation to the indicated position and direction of the piece.

To Pack and Unpack in Column of Files.

356. On narrow trails or difficult ground where column of pairs can not be formed the mules are successively posted as

conveniently as possible to the piece or to the position it is to occupy, and the piece and ammunition are packed or unpacked in the same order and by the same numbers as already explained; or the mules may be packed or unpacked at the positions they already occupy, the parts and ammunition being carried by hand to or from the position of the piece.

CHAPTER IV.—THE BATTERY MOUNTED.

SECTION I.—*Object and sequence of the instruction.*

357. The special object of this instruction is the training of the personnel of the battery in the dispositions and maneuvers requisite for getting the guns into position for action. Methods of training in opening and delivering fire have been laid down in Firing Instruction. The two kinds of training supplement each other and should be practiced concurrently.

358. A progressive order of instruction should be observed. The section and the platoon having each been instructed by its chief, the captain takes up and completes the training of the battery as a whole.

The captain requires the *section mounted* and the *platoon mounted*, properly manned, horsed, and equipped, to be instructed by their chiefs in accordance with the principles prescribed for the battery mounted. The exercises of these units, acting separately, are ordinarily elementary in their nature and preparatory to their combined work in the battery. Such exercises are accordingly executed with great precaution and attention to detail.

On the ordinary drill ground the battery is practiced in maneuvering and in fire discipline so that the details of each are thoroughly understood and well performed by the personnel of the battery and so that the various units of the battery work together smoothly and effectively under the direction of the captain.

Any place accessible to the infantry soldier, armed with the rifle and not using his hands and knees, can be reached by well-trained mountain artillery under the pack. It can accompany led cavalry over any ground possible to the latter and mounted cavalry wherever the latter does not move faster than the walk. By reason of its narrow frontage and the physical characteristics of its animals it is especially suitable for operations in mountains or jungle. Its adaptability for concealment and quiet progress make it peculiarly useful in close support of infantry and night marches.

A high degree of training in rapid marching, day and night, and in maneuvering can be attained only by constantly seeking and using opportunities for practice over all accessible kinds of difficult ground to the end that the personnel may be accustomed to adapting the principles learned on the drill ground to the accidents of a varied terrain.

Frequent practice should be had in the selection of observing stations, the reconnaissance of targets, the selection of firing positions, advancing to and occupying firing positions, under different conditions, the determination of firing data for direct and indirect laying at fixed and moving targets, simulated fire, etc. This practice should approximate the conditions of war as nearly as possible.

SECTION II.—*General provisions.*

359. All men of the battery should be instructed in the duties of both the cannoneer and driver.

360. In order that the mules may all be available in an emergency for any place in the battery, saddle mules should occasionally be worked in harness and team mules used as saddle mules.

361. The saber will not be used except at ceremonies.

362. At mounted instruction, the saber is attached to the left side of the saddle; on dismounting for fire action, it is not removed.

The rests are executed and the attention is resumed according to the principles already explained (280.)

SECTION III.—*Organization of the battery.*

363. On a war footing the battery is organized in six sections, an ammunition train, and a supply train.

The first, second, third, and fourth sections are gun sections (337), to each of which is attached one led pack mule with pioneer tools. The fifth and sixth sections are ammunition sections (338), with six mules in each team.

The ammunition train comprises ammunition mules, the mules for mechanics' forge, stores, and tools, and the necessary personnel. The pack mules are herded, not led.

The supply train comprises the kit, ration, forage, and other supply mules, and the necessary personnel. The pack mules are herded.

The first and second sections constitute the first platoon. It is commanded by the senior lieutenant.

The third and fourth sections constitute the second platoon. It is commanded by the lieutenant second in rank.

The fifth and sixth sections constitute the third platoon. It is commanded by the lieutenant third in rank.

The ammunition train is commanded by the lieutenant fourth in rank.

The supply train is commanded by the quartermaster-sergeant.

364. On subdivision for action, the battery is divided into—

The firing battery, comprising six sections, under the immediate command of the captain.

The reserve, comprising the ammunition train and reserve men and animals.

The train, comprising the supply train.

365. On a peace footing the ammunition train is not organized; the teams of the third platoon are reduced by two mules each, and the mules for pioneer tools and mechanics' forge, tools, and stores are attached to the supply train. With these exceptions the personnel, animals, and material allowed on a peace footing are organized as prescribed for a war footing, the captain making such assignments as may be necessary to replace personnel not authorized.

366. The Battery of Maneuver is ordinarily composed of the three platoons, manned, horsed, and equipped. The instruction is applicable to a greater or less number of platoons. For the training of animals and drivers, the entire battery is practiced in marching and maneuver; before taking the order in battery, however, the battery is subdivided for action, the third platoon representing the reserve.

367. The personnel of the battery of maneuver comprises the captain, four lieutenants, the first sergeant, six chiefs of section, four gun squads, two ammunition squads, the musicians, the guidon, and a driver for each pack mule.

SECTION IV.—*Duties of officers, noncommissioned officers, etc.*

368. The captain commands the battery and is responsible for its training and efficiency.

The lieutenants command platoons and ammunition train and are responsible to the captain for the efficiency of the men and

the serviceable condition of the animals and material of their platoons.

The first sergeant is assistant to the captain and is responsible to him for the general good order, police, and discipline of the battery. In action he supervises the replacement of ammunition and casualties, and has charge of the ammunition mules.

The quartermaster-sergeant is responsible to the captain for the general care and maintenance of the government property issued to the battery.

The stable sergeant is responsible to the captain for the general care of the public animals assigned to the battery, and the good order and police of the stables, picket lines, etc.

The chief mechanic is responsible to the captain for the good order and repair of the material in actual use by the battery; for this purpose he has general supervision of the battery mechanics.

The sergeants command sections and are responsible to the chiefs of platoon for the efficiency of the men and the serviceable condition of the animals and material of their sections.

The gunners are responsible to their chiefs of section for the good order of their guns, carriages, and equipment and for the serviceable condition of their gun teams, harness, and equipment.

The ammunition corporals are responsible to their chiefs of section for the good order of their ammunition and equipment and for the serviceable condition of their ammunition teams, harness, and equipment.

The drivers are directly responsible to their gunners and ammunition corporals for their mules, harness, and equipment.

It is the duty of both cannoneers and drivers to report at once to their corporals any injury to their material or mules, or any deficiency in their equipment.

369. The captain, lieutenants, sergeants, ammunition corporals, mechanics, cooks, musicians, and guidon are mounted.

SECTION V.—*Formation of battery and posts of individuals.*

Formations.

370. The habitual formations are the *order in line*, the *order in section column*, the *order in flank column*, and the *order in battery*.

371. The *order in line* is that in which the sections of the battery are formed abreast of each other in the order, or the reverse order, of their numbers from right to left.

Each section is in column of files or of pairs, the pieces being either in front or in rear of their ammunition. In the normal order in park the pieces are in front.

372. The *order in section column* is that in which the sections of the battery follow each other in the order, or the reverse order, of their numbers from front to rear.

Each section is in column of files or of pairs, the pieces being either in front or in rear of their ammunition.

373. The *order in flank column* is that in which the sections of the battery follow each other in the order, or the reverse order, of their numbers from front to rear.

Each section is in flank column (344), the ammunition teams being all either on the right or the left flank of their pieces.

374. The *order in battery* is that in which the pieces and the ammunition of the gun sections, unpacked and assembled for action (198-200, 345), are formed in line in the order or the reverse order of their numbers from right to left, the unpacked mules being either in rear of their guns or wherever the captain may direct.

The reserve (364, 366) is posted at the discretion of the captain.

Normal Intervals.

375. *In line:* Between sections, in column of files, sixteen yard; in column of pairs, fourteen yards (279); measured between adjacent pack mules.

In flank column (331, 335): Measured between adjacent pack mules.

In battery: Between guns, sixteen yards, measured between adjacent wheels.

Normal Distances.

376. *In line* (279, 335).

In section column (341, 343): Between sections, in column of pairs, seven yards; in column of files, one yard.

In flank column (314): Between teams in column of files, six yards; between teams in column of pairs, twelve yards.

In battery (345).

POSTS OF INDIVIDUALS.

377.

Individuals.	In line.	In section column.	In flank column.	In battery.
Captain.....	8 yards in front of the battery, opposite the center.	15 yards from the left flank, opposite the center.	15 yards from the flank, opposite the center, on the left when the first section leads, on the right in the reverse order.	10 yards in rear of the line of trail spades, halfway between the center sections.
Platoon commander.	In line with and halfway between the leading pack mules of his platoon.	4 yards from the left flank of his platoon, opposite the center.	Halfway between the gun and ammunition teams, in line with the leading pack mules of his leading teams.	5 yards in rear of the line of trail spades, halfway between his guns.
First sergeant...	4 yards in rear of the battery, opposite the center.	4 yards from the right flank, opposite the center.	4 yards from the flank, opposite the center, on the side away from the captain.	20 yards in rear of the line of trail spades, halfway between the center sections.
Chief of section..	(342, 343)	(342, 343)	(344)	(345)
Ammunition corporal.	(342, 343)	(342, 343)	(344)	(345)
Guidon.....	1 yard to the left of the chief of the guiding section. Before leaving park 4 yards from the right flank, aligned on the leading pack mules.	1 yard to the left of the chief of the leading section.	1 yard to the left of the chief of the guiding team.	At inspection, 4 yards from the right flank, aligned on the leading pack mules; at other times with the reserve.
Musicians.....	2 yards in rear of the captain, boot to boot.	As in line.....	As in line.....	As in line; at inspection, on the right of the guidon, all boot to boot.

378. The members of the gun squad are posted as already explained (342, 345).

379. When the quartermaster and stable sergeants are present with the battery of maneuver they are posted boot to boot in order of rank from right to left, as follows: In line and in battery, four yards from the left flank of the battery, abreast of the leading pack mules; in section or flank column, they are either four yards in rear of the last section, or four yards in front of the leading section, according as the column has been formed toward their flank of the battery or the flank opposite. In the reverse order in line and in battery they do not change to the opposite flank.

380. Mechanics, cooks, etc., when present with the battery of maneuver, are posted, if mounted, on the left of the quartermaster and stable sergeants (379); if dismounted, they are assigned posts and duties in gun and ammunition squads.

381. The posts designated in the foregoing table are the typical ones. The captain, however, goes wherever his presence is required, where he may best observe, and where his commands may best be heard. The lieutenants leave their posts if it is necessary for the purpose of supervising the work of their platoons. The chiefs of section habitually maintain their posts during the maneuvers of the battery, but during the practice of fire discipline, and at other times when necessary, they leave their posts in order to supervise the work of their sections (396).

The Directing Team.

382. In changes of formation, the teams which establish the direction and rate of march of the new formation are termed *directing teams*.

SECTION VI.—*The park.*

Disposition of the Material in Park.

383. The pieces and ammunition are ordinarily arranged in park in the order in battery (345), in the order for marching (204), the sections from right to left in the order of their numbers, with normal or such other intervals as the captain may direct, the ammunition of the third platoon on line with that at the guns.

The material of the ammunition and supply trains is conveniently arranged on the left or in rear of the battery or at such other place as the captain may prescribe.

To Form the Battery in the Park.

384. The battery dismounted, being formed on the battery parade, the first sergeant commands: *Drivers fall out.*

The chiefs of section, ammunition corporals, guidon, musicians, and drivers step six yards to the front and form facing to the front in double rank opposite the center of their respective sections; the chiefs of section place themselves in front, and the ammunition corporals in the line of file closers, of the squads thus formed. The first sergeant sees that suitable cannoneers are detailed to replace absent drivers (not counting the men on guard or other duty, who join their teams at the stable or picket line), closes the drivers toward either flank, and directs the senior chief of section to march them to the animals.

On arrival at the stable or picket line, the chief of section in charge halts the drivers and commands: *Harness.* The drivers fall out and harness under the supervision of their respective chiefs. Chiefs of section and other mounted men not drivers saddle their animals while the drivers harness.

The drivers having marched off, the first sergeant forms the gun squads and directs the senior gunner to march them to the park. The senior gunner posts the squads with their pieces, and causes them to prepare their pieces for marching (204).

If the pieces are in a gun shed, the column is halted in front of the building, the senior gunner gives the necessary directions for the formation of the park, and commands: *Form park.*

The cannoneers fall out, the carriages are run out by hand and formed in park.

The park being in order, the senior gunner commands: **1. Fall in.** He sees that members of the guard and other cannoneers who have joined at the park are properly assigned, requires the squads to call off, and posts the cannoneers with their pieces. While waiting for the teams to arrive in park the senior gunner may cause the cannoneers to rest or to fall out. Upon the arrival of the teams, he causes the cannoneers to resume their posts at attention.

If the ammunition is at a distance from the park, the senior chief of section directs the senior ammunition corporal to conduct the ammunition teams to the ammunition, have it packed and post the teams at the pieces.

When the mules are harnessed the first sergeant commands: *Lead out by team.* The sections lead out in turn and form in column. The first sergeant conducts the column to the park and posts the teams with their pieces. If the park is near by, the captain may direct that the teams of each section, as soon as harnessed, be led out and posted with their pieces under the direction of their chiefs of section. In this case the senior chief of section, on the arrival of the drivers at the stables, commands: *Harness and lead out.*

In all cases the first sergeant sees that the cannoneers perform their duties in the park, and that the drivers harness and lead out with the least practicable delay and without noise or confusion.

385. In the field the duties are performed in a similar manner. If the pack harness is at the guns (284), the mules are posted by their drivers as soon as they are harnessed.

386. The musicians report to the captain at such time and place as he may direct. The chiefs of platoons join their platoons, and the quartermaster and stable sergeants, if present, and the guidon take their posts as soon as the teams are posted with their pieces.

387. Each chief of section, as soon as his teams are posted, makes a minute inspection of his section and reports the result to his chief of platoon.

388. Each chief of platoon, having received the reports of his chiefs of section and made a general inspection of the platoon, commands: *REST.*

389. Upon the approach of the captain the chiefs of platoon call their platoons to attention, and as soon as the captain takes his place in front, report in succession from right to left: *(Such) platoon in order, sir;* or if anything be missing or out of order they so report.

As soon as the chiefs of platoon have reported, the first sergeant reports to the captain (121).

390. Having received the report of the first sergeant, the captain causes the pieces, and the ammunition if present, to be packed.

391. The battery is unparked by appropriate maneuvers.

To Dismiss the Battery.

392. The battery is parked by appropriate maneuvers, the captain preceding the command for forming line by the command: *Form park.*

393. If the maneuver for forming park is a simultaneous one, the captain causes the pieces to be unpacked and the ammunition to be unpacked or taken direct to its place of storage.

If the maneuver is a successive one, each chief of section, as his section arrives on the line, causes his piece to be unpacked. In this case the ammunition is disposed of as the captain may direct.

394. As soon as the battery is unpacked each chief of section makes a minute inspection of his section and reports all losses or injuries to the chief of platoon; the chiefs of platoon then report in succession from right to left: (*Such*) *platoon in order, sir*; or if anything be missing or out of order they so report.

The reports having been made, the captain gives such instructions as may be necessary, and directs the first sergeant: *Dismiss the battery.* The officers return sabers, if drawn, and fall out.

The first sergeant commands: 1. *By the right (left)*, 2. *FILE OFF.*

The quartermaster and stable sergeants and the guidon leave the park and return their horses to the stable or the picket line; the gunners and the ammunition corporals cause their cannoneers to clean and cover and put away their material, as may be directed by the first sergeant.

The teams file off in the order of their sections (311). The first sergeant marches the column to the stable and commands: *Fall out.* Each chief of section conducts his section to its proper place in the stable and gives the necessary commands for unharnessing. The drivers unharness under the supervision of their chiefs; the riding animals are unsaddled while the drivers unharness.

As soon as the drivers have cared for their animals and harness, the first sergeant directs the senior chief of section to march them to the battery parade ground and dismiss them.

As soon as the cannoneers have cared for their material the first sergeant directs the senior gunner to march them to the battery parade ground and dismiss them.

If the stable and the park are too far apart for the first sergeant to superintend both the drivers and the cannoneers the captain gives such instructions as he desires.

395. In the field the duties are performed in a similar manner, except that if the pack harness is to be disposed at the pieces the first sergeant, when directed to dismiss the battery, commands: *UNHARNESS* (292).

The mules are tied to the picket line as soon as unharnessed.

SECTION VII.—*Route marches.*

396. The section column is the habitual column of route, but distances may be increased if the ground is difficult, or decreased if conditions are favorable (342).

The route order and at ease are executed and the attention is resumed as in paragraphs 135, 342, 343.

The captain usually marches fifteen yards in front of the head of the column, the musicians following him, side by side, at two yards distance.

When the leading section in column of files is preceded by its chief (342) the guidon precedes the latter.

The chiefs of platoon habitually march at the rear of their platoons and superintend their march, going wherever their presence may be required.

The chiefs of section leave their posts whenever necessary to superintend the march of their sections.

In the absence of its lieutenant, the stable sergeant has command of the reserve, which ordinarily marches immediately in rear of the last platoon.

The supply train ordinarily marches at the rear of the column under the command of the quartermaster-sergeant.

397. Marching in section column of pairs, chiefs of section form column of files when necessary, re-forming column of pairs as soon as the ground permits.

398. To avoid dust, the captain may direct the officers and men to march on the windward side of the column. For similar reasons the cannoneers may be permitted to march on either flank to take advantage of a footpath, etc., but usually several cannoneers should be close to each section to correct the adjustment of loads and harness.

Constant attention should be given by each officer and non-commissioned officer to insure proper handling of the mules and correct adjustment of loads and harness. They should see that no mule is overworked or overheated; that distances are preserved as nearly as the nature of the ground will permit, and that no mule moves at a different gait (413) from that properly authorized. No practice is more fatiguing and injurious to animals than the alternate walking and trotting so often seen at the rear of a column.

As it is very difficult to avoid undue extension of the column, every advantage will be taken of opportunities to move over parallel routes in subdivision columns when great dispersion will not result.

At each halt lost distances will be regained, if possible, without increasing the gait.

Pack mules that have lost their places in the column will march at the rear of the battery until there occurs a favorable opportunity to regain their positions without increasing the gait.

SECTION VIII.—*Commands, signals, etc.*

Commands.

399. Commands are given by the captain either verbally, by bugle signals, or by signals made with the arm.

When verbal commands are given by the captain, they may be supplemented by the appropriate bugle or arm signals.

400. Chiefs of platoon repeat the commands of the captain, or give appropriate commands to their platoons in time to insure the proper execution of the maneuver. The chiefs of platoon ordinarily give their commands verbally, supplemented, if necessary, by the appropriate arm signal, and see to it that the commands of the captain are understood and correctly executed by their platoons. If a chief of platoon does not hear a command, he governs himself by what he sees executed by the adjoining platoon.

401. Chiefs of section repeat the commands of the chiefs of platoons, or give appropriate commands to their sections in time to insure the proper execution of the maneuver. Chiefs of section ordinarily give their commands by signals with the arms,

supplemented, if necessary, by verbal commands, and see to it that the command is understood, and that it is correctly executed.

Arm Signals.

402. Signals are ordinarily made with the right arm, but may be made with the left arm when more convenient; when made with the left arm the reins are taken temporarily in the right hand.

If the saber is in hand, the signals are made in a manner similar to that prescribed for the arm.

403. Ordinarily, before making a signal for the execution of a movement, the captain places himself where he can be seen by the battery, generally with his horse facing in the same direction as the team horses, and commands or signals the *attention* or causes it to be sounded on the bugle. The captain may signal the attention by blowing a long blast on a whistle.

The signals prescribed for the different maneuvers are *preparatory* signals; for the signal of *execution*, the arm is extended vertically and then lowered quickly to the side. If the movement involves a change in the direction of march, the captain moves his horse in the new direction on making the preparatory signal.

404. Preparatory signals:

Attention. Extend the arm vertically and move it slowly back and forth from right to left.

Forward. Extend the arm vertically and lower it to the front until horizontal.

By the right (left) flank. Extend the arm vertically and lower it to the right (left) until horizontal.

Right (Left) about. Extend the arm vertically and describe slowly a large horizontal circle with the hand; then extend the arm to the left (right) and describe a horizontal arc to front and right (left).

Countermarch. Extend the arm vertically and describe quickly several horizontal circles with the hand.

Right sections forward. Extend the arm vertically and then thrust several times to the front.

Right (Left) oblique. Extend the arm obliquely upward to the right (left) and front, and then lower the arm describing a vertical circle on the right (left) side of the horse.

To increase the gait. Carry the hand to the shoulder, forearm vertical; extend the arm vertically from this position and repeat several times.

To decrease the gait. Hold the arm horizontally above and in front of the forehead.

To indicate an increased or decreased gait for a maneuver, the appropriate signal is made just after the preparatory signal for the maneuver.

To halt. Extend the arm vertically and hold it there until the signal is obeyed.

To change direction to the right (left). Extend the arm vertically; lower it to the left (right) until horizontal and describe a horizontal arc to the front and right (left).

To close intervals. Point to the section on which the intervals are to be closed, and then signal right (left) oblique, or left and right oblique, according as the intervals are to be closed on the right (left) section or on an interior section.

To extend intervals. Point to the section on which intervals are to be extended, and then signal left (right) oblique, or right and left oblique, according as the intervals are to be extended on the right (left) section or on an interior section.

Right (Left) by section. Point at the right (left) section and signal forward.

Right (Left) front into line. Extend the arm vertically and describe several large vertical circles on the right (left) side of the horse.

Right (Left) into line. Signal a change of direction to the right (left), followed by describing small circles with the hand while the arm is extended to the right (left).

Pieces front. Extend the arm horizontally to the front and then move it several times through a small vertical arc.

Ammunition front. Extend the arm horizontally to the front and then move it several times through a small horizontal arc.

Flank column, right (left) oblique. Extend the arm horizontally to the right (left) and then move it several times through a small horizontal arc.

Action front (right, left, rear). Extend the arm vertically; then lower it quickly to the front (right, left, rear), and repeat several times.

Pack (right, left, rear). Extend both arms vertically; then lower the right arm quickly to the front (right, left, rear), and repeat several times.

SECTION IX.—*Maneuvers of the battery.*

GENERAL PROVISIONS.

Guides.

405. Chiefs of section supervise the gait and direction of march of their sections.

406. The guide of a team is its leading driver in column of files; the near driver of its leading pair in column of pairs.

407. The guide of the battery in section column is the guide of its leading section; in line, the guide of its right, left, or center section; in flank column, the guide of its leading team on one flank or the other.

The second or third section is the center section, according as there are two or three platoons.

408. During an oblique the guide of the battery is the guide of the leading team on the side toward which the oblique is made.

409. On leaving park the guidon at once posts himself with the guide of the battery. If a subsequent maneuver places the guidon at the rear of a section column, he hastens to post himself with the guide of the leading section; if with a rear team in line or in flank column, he hastens to post himself with the guide of the leading team nearest his former position or takes post with the indicated guide if one is announced. During an oblique march the guidon does not change position.

410. With the exception just noted, the guide is habitually toward the guidon; while he is changing position it is toward the guide with whom he is to take post.

411. The captain may announce or change the guide thus: *Guide right (left or center).*

412. If the captain desires he may place himself in front of any team of the battery and command: *Guide on me.* The team

in rear of the captain then follows his movements and the others guide on this as the directing team (382), regulating their march so as to maintain their proper relative positions. The guidon posts himself with the directing team.

Gaits.

413. The habitual gait for maneuver is the walk at the same rate as quick time (55, 347).

To Form the Teams in Column of Files or of Pairs.

414. Being in line, in section column, or in flank column, the commands are as in paragraphs 334 and 336, the execution is simultaneous in all the sections, the personnel taking their posts promptly (342-344).

To Align the Battery.

415. The battery being in line at a halt:

If the section on the side toward which the alignment is to be made is not in the proper position, the captain establishes it in the position desired, and commands: 1. *Right (Left)*, 2. *DRESS*, 3. *FRONT*.

At the command *dress*, the other teams move forward or backward, preserving their intervals; the drivers cast their eyes to the right and dress on the drivers of the teams established as a basis of alignment. The captain places himself on the right flank in line with the guide of the base team facing to the left; he quickly establishes the guide of the leading team of the second section of the desired line and then superintends the alignment of the other guides of the front rank teams. The first sergeant similarly superintends the alignment of the guides of the rear-rank teams. When the alignment is complete the captain commands *front*, the captain and first sergeant resume their posts and the drivers turn their eyes to the front.

To March to the Front.

416. 1. *Forward*, 2. *MARCH*.

Executed simultaneously by all the teams (298, 322, 335).

*To Halt.***417. 1. Battery, 2. HALT.**

Executed simultaneously by all the teams (299, 323, 335).

*To March by the Flank.***418. 1. By the right (left) flank, 2. MARCH.**

Executed simultaneously by all the teams (324, 335), the rear teams quickly taking the track and distance (276) from the teams which precede them in the new formation.

419. If the battery is in line with closed intervals (426), the movement is successive; the section on the indicated flank begins the movement; the others take it up in turn so that their teams shall follow at the proper distance (376) in the track of the teams which precede them. If executed while marching, all the sections except the one on the indicated flank halt and then resume the march so as to follow in their proper places in the column.

*To March to the Rear.***420. 1. Right (Left) about, 2. MARCH, or, 1. Countermarch, 2. MARCH.**

Executed simultaneously by all the teams (325, 326).

421. If the battery is in line with closed intervals (426), the captain first commands: **1. Right sections forward, 2. MARCH.** The right section of each platoon moves forward so as to clear the left section. The left sections halt or remain at a halt. As soon as the right sections are clear of the left sections, the captain gives the command for the *about* or the *countermarch*, which is executed by all the sections. On the completion of the *about* or *countermarch*, the sections in rear gain their position in line at a trot.

*To March Obliquely.***422. 1. Right (Left) oblique, 2. MARCH.**

Executed simultaneously by all the teams (327). The teams move on parallel lines. The guides align themselves in each rank of teams; each guide of a rear rank team also aligns himself on the guide of the team corresponding to his own in the

front rank. If these positions are properly maintained, the teams should, on executing a second oblique in either direction, have the proper distances, intervals, and alignment.

To Change Direction.

423. Being in section column or in flank column: 1. *Column right (left)*, 2. **MARCH.**

The leading section wheels to the right (329); the sections in rear follow the leading section and wheel on the same ground.

Column half right (half left) is similarly executed (330).

424. Being in line: 1. *Battery right (left) wheel*, 2. **MARCH.**

The pivot section wheels to the right (329) and halts. The other sections preserve their intervals from the pivot section and halt on arriving abreast of it.

Battery right half (left half) wheel is similarly executed.

To Execute a Passage of Teams.

425. Being in line or in section column, to place the rear teams in front: 1. *Pieces (ammunition) front*, 2. **MARCH.**

Executed simultaneously by all the sections (333).

To Close or Extend Intervals in Line.

426. 1. *On (such) section*, 2. *To (so many) yards*, 3. *Close (extend) intervals*, 4. **MARCH.**

The indicated section moves straight to the front; the other sections take up the trot, incline by team toward or away from the indicated section, move to the front when at the proper interval, and take the walk when arriving abreast of the indicated section.

To Form Section Column to the Front from Line.

427. 1. *Right (left) by section*, 2. **MARCH.**

The right section moves straight to the front. The other sections wheel to the right in turn so as to follow at the proper distance in the track of the sections which precede them. If

executed while marching, all the sections except the one on the indicated flank halt, and then resume the march so as to follow in their proper places in the column.

To Form Line from Section Column.

429. To the front: 1. *Right (left) front into line*, 2. **MARCH.**

The leading section moves straight to the front and is halted by its chief of section when it has advanced eight yards. Each section in rear obliquates to the right until opposite its place in line, when it obliquates to the left, moves to the front and takes its place on the line.

430. To the right (left): 1. *Right (left) into line*, 2. **MARCH.**

The leading section executes a right wheel and is halted by its chief as soon as the rear team has straightened out in the new direction. The other sections move forward and successively wheel to the right when, by so doing, they will be opposite their positions in line on the right of the preceding sections; they then move to the front and take their places on the line.

431. On the right (left): 1. *On right (left) into line*, 2. **MARCH.**

Executed as for *right into line*, except that each section passes beyond the preceding one before wheeling.

432. To form line at closed or extended intervals, the captain commands: *At (so many) yards*, before giving the prescribed commands for forming line; the battery is then formed with the indicated instead of the normal intervals.

To Form Flank Column from Section Column.

433. 1. *Flank column, right (left) oblique*, 2. **MARCH.**

The leading section forms flank column as in paragraph 331; the leading teams of the other sections move straight to the front and are halted at normal distances (376) from the teams that precede them; the rear teams of all the sections simultaneously oblique to the right; and then oblique to the left when, by so doing, they will have the normal interval from the leading teams, and move forward until each is abreast of its leading team.

434. To form flank column at closed or extended intervals, the captain commands: *At (so many) yards*, before giving the prescribed commands for forming flank column; the battery is then formed with the indicated instead of the normal intervals.

When the interval is greater than normal the leading team advances, before halting, an additional distance equal to the increase of the normal interval.

To Close or Extend Intervals in Flank Column.

435. 1. *On pieces (ammunition)*, 2. *To (so many yards)*, 3. *Close (extend) intervals*, 4. **MARCH.**

The indicated teams move straight to the front; the other teams take the trot, incline toward or away from the indicated teams, move to the front when at the proper interval and resume the walk when abreast of the indicated teams.

To Form Line to the Front from Flank Column.

436. 1. *Right (left) front into line*, 2. **MARCH.**

The teams on the right of the column execute right front into line (429); the teams on the left move by the right flank, and each forms in section column in rear of the other team of its own section.

To Form Section Column from Flank Column.

437. 1. *Pieces (ammunition) front*, 2. **MARCH.**

Executed successively by each section (332); each section in rear times its movement so as to follow in the track of the preceding section at the normal distance.

If executed while marching, all the teams except the leading indicated team halt and then resume the march in time to follow in their proper places in the column.

Passage of Obstacles.

438. If, while maneuvering or marching, an obstacle is encountered by any subdivision, its chief, without waiting for orders, gives appropriate commands for avoiding the obstacle and for resuming the original formation as soon as the obstacle is passed.

SECTION X.—*To subdivide the battery for action.*

439. Before unpacking the guns for action, the battery on a war footing is subdivided (364). The battery of maneuver is subdivided into the firing battery and the reserve (366).

440. To subdivide the battery and prepare it for action, the captain commands: **PREPARE FOR ACTION.**

The reconnaissance and signal officer, if present, and the reserve and train commanders report to the captain for instructions.

The subdivision is ordinarily effected in rear of the position to be occupied. As the firing battery moves forward to its position the reserve commander posts the reserve under cover in the general locality indicated by the captain; the quartermaster-sergeant similarly posts the train.

When the third platoon is a part of the firing battery it is posted by its chief as the captain may direct.

The guns are then conducted to their position and, if unpacked (353-356, 449), are prepared for action (199).

441. If, for any reason, it is desired to subdivide the battery without preparing for action, the captain commands: **FORM FOR ACTION.** The battery is subdivided, but the guns are not prepared for action.

442. During elementary instruction in fire discipline, the captain may require the chief of the third platoon to drill it in the exercises of the platoon mounted.

SECTION XI.—*To form in battery and resume a marching formation.*

443. The order in line and the order in flank column are the habitual formations preliminary to taking the order in battery. The first is adapted to unpacking for action either to the front or the rear; the latter, to unpacking for action to a flank. By suitable maneuvers the battery is placed on the desired ground in the appropriate formation before the commands for unpacking are given. The order in battery may, however, be formed to a flank from section column.

444. When unpacking to fire projectiles or for the practice of fire discipline, the captain and the chiefs of platoon and section dismount. The captain's horse is held under cover near

the position of the battery by one of the musicians. Each chief of platoon passes the reins of his horse to one of his trail mule drivers; each chief of section passes the reins of his mount to his wheels mule driver; these mounts are led off with the unpacked mules and are returned in like manner on packing after action.

The first sergeant, musicians, orderlies, etc., habitually dismount when their duties require them to remain with the firing battery, and the first sergeant sees that the mounts are held under cover.

445. In active service and in instruction simulating it, the unpacked mules are habitually placed under cover in the vicinity of the guns, generally on the flank, with the third platoon, unless the latter is acting as a reserve. The captain indicates the position they are to take before giving the commands for unpacking. At ceremonies the unpacked mules are in the rear of their guns (345).

446. When posted elsewhere than in rear of the guns, the unpacked mules are formed so as to take the best advantage of cover, generally in section line or in line of teams faced toward the enemy. After unpacking, the teams take their order in battery and at the command or signal of the first sergeant are conducted by him to the place designated by the captain and formed. If the position is to be occupied for a considerable time, the first sergeant allows the drivers to stand at rest, leaves the teams under the commander of the third platoon, or places an old soldier in charge and returns, dismounted, to the position of the guns.

447. If the unpacked mules are posted on the flank of the battery, at the command or signal for packing, they file off from the flank nearest the battery and move in section column toward it; on approaching the position of his gun each driver conducts his mule to its post for packing (350).

448. After unpacking, the guns and teams are habitually aligned toward the right.

To Fire to the Front, Rear, Right, or Left.

449. Being in line: **ACTION FRONT (REAR).**

Being in section column or in flank column: **ACTION RIGHT (LEFT).**

Executed simultaneously by all the sections as at the commands for unpacking (353-355), except that the guns are at once prepared for action.

To Pack to the Front, Rear, Right, or Left.

450. Executed by the commands and means already explained (350-352).

If the battery is prepared for action, the commands for packing should be preceded by the command: **MARCH ORDER** (204).

CHAPTER V.—THE BATTALION MOUNTED.

SECTION I.—*Organization of the battalion.*

467. A battalion of field artillery consists of three batteries and of the authorized staff and noncommissioned staff. It is commanded by a major.

The field, staff, noncommissioned staff, etc., of a battalion are as follows:

Personnel.	No.	Duties.
Major.....	1	Commands battalion.
Captain.....	1	Adjutant and reconnaissance officer.
Lieutenant.....	1	Quartermaster and commissary.
Sergeant-major....	1	Assistant to adjutant and reconnaissance officer.
Quartermaster-sergeant.	1	Assistant to quartermaster and commissary.
Musician.....	1	Musician, orderly, and horse holder. (Detailed from one of the batteries; additional strength.)
Privates.....	2	Drivers of the battalion commander's reel and instrument mules. (Detailed from a battery; additional strength.)

SECTION II.—*Formations of the battalion.*

468. The normal formations of the battalion are: The *order in line*, the *order in section column*, the *order in flank column*, and the *order in battery*.

The individual batteries are formed in each case as heretofore prescribed (370-374) and, in each case, the formation of the battalion is analogous thereto.

469. In the normal order, the interval between batteries *in line* or *in battery* is twice the interval between the sections of

the batteries. The distance between batteries in *section column* is fifteen yards; in *flank column of files*, twenty-two yards; in *flank column of pairs*, twenty-six yards.

470. If the battalion is formed in column, with its batteries each formed in the order in line, the formation is termed a *column of batteries*. The distance between the batteries is equal to the battery front, when at *full distance*; it is fifteen yards when at *closed distance*. When the battalion is in column of batteries at closed distances it is said to be *closed in mass*.

471. If the battalion is formed in line with its batteries each formed in the order in section column, or the order in flank column, the formation is termed a *line of section columns*, or, a *line of flank columns*. Full interval, in this case, is such as would result if the batteries had executed a simultaneous change of direction to the right or left from a formation of the battalion in the order in section column or the order in flank column; closed interval is such as the major may prescribe.

472. At formations of the battalion, batteries habitually take their places from right to left in line, from front to rear in column, in the order of rank of their captains.

Batteries whose captains are absent take their places in line or column according to the relative rank of the officers present in command of them. A battery whose captain is absent for a few days only retains its place, according to the rank of the captain, unless otherwise ordered by the major.

After the formation of the battalion no cognizance is taken of the relative order of the batteries. On marches the major ordinarily varies from day to day the relative order of the batteries in column.

SECTION III.—*Posts of individuals.*

474. At ceremonies the major is thirty yards in front of his battalion, opposite the center. On other occasions he places himself where he can most readily observe and direct his battalion. The commissioned staff is posted two yards in rear of the major, in order of rank from right to left; the noncommissioned staff and the musician, similarly formed, two yards in rear of the commissioned staff.

When the agents of communication and scouts are with the battalion commander the noncommissioned officers form in line two yards in rear of the noncommissioned staff, in the order of the permanent alphabetical designations of their batteries

from right to left. The privates are similarly formed in rear of the noncommissioned officers, except that when the battalion mules are in use they are with the latter. The battalion mules are posted in rear of the battalion staff or with one of the batteries, as may be prescribed by the battalion commander.

Whenever the maintenance of a close formation would be unduly conspicuous or dangerous, as for example in approaching a position for reconnaissance, the staff, agents, etc., of a commanding officer do not retain their prescribed posts; they are required to dispose themselves so as to secure the greatest measure of concealment consistent with a proper performance of their duties. *This rule is general.*

SECTION IV.—*To form the battalion.*

475. To form the battalion in line, the adjutant causes adjutant's call to be sounded; the adjutant and sergeant-major proceed to the selected ground and post themselves facing each other a few yards outside the points where the right and left of the right battery of the battalion are to rest.

The batteries approach the line from the rear and are posted in succession from right to left by their captains, so that the heads of the leading mules will be on the line established by the adjutant and sergeant-major. After halting his battery, each captain aligns it toward the right (478).

When the battery that arrives first on the line has been established, the sergeant-major joins the battalion noncommissioned staff.

The line being formed, the major and his staff take post facing the center of the battalion. The adjutant then moves at a trot or gallop by the shortest line to a point midway between the major and the center of the battalion, halts, facing the major, salutes with the right hand, and reports: *Sir, the battalion is formed.*

The major returns the salute with the right hand.

The adjutant then takes his post with the battalion staff.

476. The battalion may also be assembled in any other convenient formation. In such cases, as soon as the last battery has taken its place, the adjutant joins the major and reports to him that the battalion is formed.

477. Officers draw and return saber with the major. At ceremonies, sabers are habitually drawn; at other times, they

are drawn or kept in the scabbard at the discretion of the major.

478. To align the battalion.—To effect a general alignment the major causes one of the flank batteries to be established in the desired position, and commands: 1. *By battery*; 2. *Right (Left)*; 3. *DRESS*.

Each captain, in turn, commencing with the battery first posted, aligns his battery toward the flank designated, and commands *Front* when the alignment is complete.

The captain and first sergeant of the battery first established superintend the alignment from the flank of their battery nearest the point of rest. The captain and first sergeant of the other batteries superintend the alignment from the flank of their battery farthest from the point of rest.

479. To dismiss the battalion.—The major commands: *Dismiss your batteries*, or sends appropriate instructions to the captains. Each captain marches his battery to its park and dismisses it.

SECTION V.—*Maneuvers of the Battalion.*

480. To reach the position for action at the proper time and to occupy it skillfully are the objects to be aimed at in training in maneuver.

The actual occupation of the position is not, as a rule, effected by a formal maneuver of the battalion as such, but rather by the separate movement of the individual batteries to the positions assigned them, to the end that all possible advantage may be taken of the cover and concealment afforded by the ground.

Formal maneuvers of the battalion, as such, are consequently of limited application.

For passing from one formation to another, and for the simple evolutions requisite for ceremonies and the ordinary incidents of service, the battalion is maneuvered in accordance with the principles heretofore prescribed for a single battery and by similar commands. In the case of simultaneous movements, such as marching to the front, to the flank, to the rear, obliquely, etc., the command or signal of execution of the major is immediately repeated by the captains and simultaneously executed by the batteries. In the case of successive movements, the captains maneuver their batteries so as to cause them to assume their proper positions by the shortest route.

481. The commands of the major are transmitted by couriers, or given by arm, saber, or bugle signals, or by word of mouth. The captains habitually repeat the commands of the major, or give such commands as may be necessary to insure the execution of the movement. Their commands are given by arm or saber signal, or by word of mouth. The whistle, and not the bugle, is habitually used to attract attention to the signals of the captain during the evolutions of the battalion.

CHAPTER VI.—THE REGIMENT MOUNTED.

SECTION I.—*Organization of the Regiment.*

482. A regiment of field artillery consists of six batteries, organized into two battalions, and of the authorized staff, non-commissioned staff, and band. It is commanded by a colonel.

The field, staff, noncommissioned staff, etc., of a regiment are as follows:

Personnel.	No.	Duties.
Colonel.....	1	Commands regiment.
Lieutenant-colonel.....	1	Assists colonel.
Majors.....	2	Command battalions.
Captain.....	1	Adjutant and reconnaissance officer.
Captain.....	1	Quartermaster.
Captain.....	1	Commissary.
Veterinarians.....	2	
Sergeant-major.....	1	Assistant to adjutant and reconnaissance officer.
Quartermaster sergeant.....	1	Assistant to quartermaster.
Commissary sergeant.....	1	Assistant to commissary.
Color sergeants.....	2	
Musician.....	1	Musician, orderly, horse holder. (Detailed from one of the batteries; additional strength.)
Privates.....	9	Mounted orderlies.
	2	Drivers regimental commander's reel and instrument mules. (Detailed from a battery; additional strength.)
Chief musician.....	1	} Band.
Chief trumpeter.....	1	
Principal musician.....	1	
Drum major.....	1	
Sergeants.....	4	
Corporals.....	8	
Cook.....	1	
Privates.....	11	

SECTION II.—*Formations of the regiment.*

483. The formations of the regiment are similar to those of the battalion, the intervals and distances between battalions being normally twice those between batteries.

484. If the regiment is formed in line with its battalions each in column of batteries closed in mass, the formation is termed a *line of masses*. The normal interval between battalions in this case is 30 yards.

485. At formations of the regiment, battalions normally take their places from right to left in line, from front to rear in column, in the order of rank of the battalion commanders.

But if battalions of artillery of different types are grouped in a regiment, they are, at ceremonies, formed in order from right to left in line, or from front to rear in column, as follows: Horse artillery, light artillery, heavy artillery, mountain artillery.

Battalions of the same type, whose permanent commanders are absent, take their places in line or column according to the relative rank of the officers present in command of them. A battalion whose permanent commander is absent for a few days only retains its usual place, unless otherwise ordered by the regimental commander.

After the formation of the regiment no cognizance is taken of the relative order of the battalions.

SECTION III.—*Posts of individuals.*

487. At ceremonies the colonel is sixty yards in front of his regiment, opposite the center. On other occasions he is where he can best observe and direct his regiment.

The lieutenant-colonel is on the right of the commissioned staff; the commissioned staff is two yards in rear of the colonel, adjutant on the right, the others in order of rank from right to left; the noncommissioned staff and musician are two yards in rear of the commissioned staff and in similar formation.

When the agents of communication and scouts are with the regimental commander, the noncommissioned officers form in line two yards in rear of the noncommissioned staff, in the order of the permanent numerical designation of their battalions from right to left. The privates are similarly formed in rear of the noncommissioned officers.

SECTION IV.—*To form the regiment.*

488. The battalion commanders are notified as to the time, place, and order of formation of the regiment. Each forms his battalion at the time and place designated, and in the order prescribed.

For line formations the adjutant indicates to the major of the first battalion the point of rest and the line on which the regiment is to be established; he then takes post about thirty yards in front of the center of the regiment.

The line being formed, the colonel, the lieutenant-colonel, staff, etc., take post facing the center of the regiment.

The adjutant then brings the regiment to attention, if not already at attention, faces the colonel, salutes, and reports: *Sir, the regiment is formed*; the colonel returns the salute with the right hand. The adjutant then takes post with the regimental staff.

The regiment may also be formed in any other convenient formation; in such cases, as soon as the last battalion has taken its place the adjutant joins the colonel and reports to him that the regiment is formed.

SECTION V.—*Maneuvers of the regiment.*

489. The colonel causes his commands to be transmitted to the battalion commanders, and the latter maneuver their battalions according to the principles heretofore prescribed, so as to place them in the desired formation at the proper time and place.

The commands of the colonel may be given by bugle, arm signals, or voice, but as a rule they are conveyed by couriers.

PART V.

THE SERVICE OF INFORMATION AND COMMUNICATION.

CHAPTER I.—PERSONNEL.

490. The enlisted personnel regularly assigned to the service of information and communication in a regiment of field artillery is as follows:

Battalion.	Battery.	Agents of communication.		Signal detail.	Scouts.
		Between battery and battalion commanders.	Between battalion and regimental commanders.		
1st...	1st..	1 corporal..	.....	1 corporal, 4 privates.	1 corporal, 1 private, or 2 privates.
	2d..	1 corporal..	.....	1 corporal, 4 privates.	1 corporal, 1 private, or 2 privates.
	3d..	1 corporal..	1 sergeant..	1 corporal, 4 privates.	1 corporal, 1 private, or 2 privates.
2d...	1st..	1 corporal..	.....	1 corporal, 4 privates.	1 corporal, 1 private, or 2 privates.
	2d..	1 corporal..	.....	1 corporal, 4 privates.	1 corporal, 1 private, or 2 privates.
	3d..	1 corporal..	1 sergeant..	1 corporal, 4 privates.	1 corporal, 1 private, or 2 privates.

491. Scouts are especially charged with securing information.

Agents of communication ^a are especially charged with keeping a commander and his immediate subordinates in touch with

^a Usually referred to as "agents." They are provided with red brassards, which are worn on the left arm.

each other, whether by carrying messages or by the use of telephones or signals.

The signal detail is especially charged with establishing and operating the necessary system of telephone or signal communication.

The special instruction of the signal detail is generally confined to setting up and operating telephone lines and to signaling with the flag, heliograph, and lantern.

In the exigencies of service scouts and agents are apt to be called upon to perform each other's duties indiscriminately. Scouts are accordingly instructed in the special duties pertaining to agents, and *vice versa*, while both are instructed in telephone and signal duties.

492. The men designated for the foregoing duties are selected for special aptitude, and are carefully instructed in the functions which they are to perform. Additional men are designated to receive the instruction at the same time, so that substitutes may be available.

The instruction is ordinarily by battalion and under charge of the battalion adjutant.

493. Scouts and agents are mounted. Two men of the signal detail of each battery are also mounted in order that they may act as line guards.

494. Scouts and agents join the officer to whom assigned, and enter upon their duties at the formation of the command or at the time designated by the officer.

CHAPTER II.—SCOUTS.

SECTION I.—*Duties of scouts.*

495. To secure information which will facilitate the movement and the employment of artillery is the special function of artillery scouts.

The movement of artillery is facilitated, for example, by determining the practicability of a given route; by exploring a section of country and selecting the best routes for traversing it; by locating any bodies of the enemy which might obstruct the movement, etc.

The employment of artillery is facilitated, for example, by determining (a) the dispositions of the enemy, (b) the dispo-

sitions of our own troops, (c) such changes in these dispositions as may occur from time to time during the progress of an action; by observing the effect of our fire, and indicating, if necessary, corrections which will insure its proper adjustment; by reporting the arrival of hostile parties within dangerous proximity of the artillery position, etc.

The special functions of scouts are, then, to reconnoiter, to observe, to report.

496. The scouts pertaining to the batteries of a battalion are, as a rule, instructed by the battalion adjutant. In service they act as battalion scouts, under the immediate direction of the adjutant (reconnaissance officer).

When a battery is detached from its battalion, however, its scouts accompany it.

When the artillery force operating together comprises more than one battalion, the artillery commander employs, under his own direction, such of the battalion scouts as he may need, or else distributes the reconnaissance duties among the different battalions.

497. On minor duties scouts may operate singly. Ordinarily, however, they operate in pairs, one devoting his special attention to gaining the desired information, the other looking out for safety, keeping track of the route followed, and watching for signals from the main position or from neighboring scouts. In especially important cases a patrol consisting of several scouts under a reconnaissance officer is employed.

Scouts operate according to the rules laid down for patrols (see Field Service Regulations, par. 72 *et seq.*), so far as these rules are applicable to their more restricted functions. When sent on a duty they are to be given explicit instructions as to the information required, as to the place for reporting, and as to the time available for securing the desired information. Full latitude is to be allowed them in the choice of ways and means to carry out the duties imposed.

498. The nature of the duties to be performed by scouts is indicated below:

1. In reconnoitering a designated road the scout prepares himself to report especially upon: Its general practicability for artillery; pioneer work needed, if any; condition of the road as affecting rate of march; strength of bridges; the existence of defiles on the road, such as causeways, bridges, narrow

valleys, etc.; practicability in general of leaving the road and moving across adjacent country; existence of intersecting roads, with direction and destination.

2. In selecting a route to a given point the scout endeavors first to get a good view of the terrain. If no road exists in the desired direction he studies the lay of the ground and judges where the most practicable route will be. If possible, he selects certain landmarks on the proposed route from which good views can apparently be obtained, and proceeds rapidly from one to the other, studying the country as he moves. Having determined a practicable line of advance to the given point he may make more detailed investigations as he returns.

When the advance to an artillery position is in question it is especially desirable that scouts should examine all the ground in the neighborhood of the position so as to be able to lead officers or batteries quickly to any part of it.

3. In reconnoitering a route scouts must be especially careful to note landmarks, to turn frequently and look at the country which they have passed, and to take such other measures as will enable them to surely retrace their steps either by day or night. Practice in moving at night is particularly important for scouts.

4. When sent to examine a place in which an enemy may be concealed—for example, a wood, a defile, a village—scouts first examine its approaches, its edges, and, if possible, its exits; they endeavor to reach a position from which they can overlook it; ordinarily, one scout or one party should observe, while another passes through the suspected place.

If preceding the column by only a short distance scouts must act in such cases with great promptness.

5. When the information at hand as to the location and disposition of the enemy is insufficient, scouts may be pushed forward to secure this information, both by personal reconnaissance and by communicating with our own advanced troops. In such cases they should fix in their minds the lay of the ground near the enemy's positions, noting such landmarks and making such sketches as will enable them to give a clear description of his situation. Similar information should at the same time be secured with regard to our own troops.

6. During an action, when observation of fire or of the terrain is difficult, parties of scouts may be sent to occupy positions

from which they can keep their commander continually informed as to the efficacy of the fire and as to changing conditions in the field of action. Thus they should be able: To verify the presence of the enemy in a certain locality and report his situation and dispositions with reference to certain landmarks; to report the arrival of bodies of the enemy in a given position or their departure therefrom; to report the positions occupied by our own troops, the possibility of firing over them with safety, and special ways in which the guns may be of assistance to them; to report whether or not our fire is properly adjusted, indicating such corrections as may be necessary.

When on this duty scouts should, whenever practicable, gain touch with our own advanced troops and act as a medium of communication between their own artillery commanders and such troops.

7. Artillery in position is, as a principle, safeguarded by troops of the other arms; but when posted in exposed positions, as, for example, on the flank of a line, it is incumbent upon the artillery commander, as an additional precaution, to post scouts where they may, by suitable signals, give timely warning of the approach of hostile parties.

8. The information secured by a single scout is ordinarily communicated by a verbal report. In the case of a patrol, however, it is often advisable for the patrol commander to send concise written reports, giving important information as it is secured. These reports should be supplemented by a sketch on which is indicated the important information secured. A route sketch should be on a scale of three inches to the mile. A panorama sketch of the enemy's position should show angular distances in miles between important points. The point from which the sketch was made should be clearly stated and should, if practicable, be indicated on the route sketch.

Scouts acting as auxiliary observers during an action report, if possible, by telephone; otherwise, by signals with flag, heliograph, or lantern.

In communicating with each other for the purpose of indicating a change in the direction of march scouts employ the signals prescribed in Artillery Drill Regulations. The whistle or the arm signal is used for attracting attention.

To indicate danger, enemy in sight, both arms are raised vertically. The arms are raised and lowered energetically several times if the danger is imminent.

SECTION II.—*Training of scouts.*

499. For scout duty, alert, cool-headed and intelligent men should be selected; they should be good horsemen and have good eyesight and good hearing.

Each scout should be provided with a good field glass or telescope, a compass, a watch, a whistle, a pocket message and sketch book, and a pencil.

500. The training of a scout should have for its object:

1. To develop his powers of observation.
2. To teach him what to look for and how to recognize it.
3. To teach him how to report intelligently and concisely.

The scout's powers of observation and description are developed first of all by simple exercises. Thus he may be required to look at a given section of terrain and describe what he sees in it.

The scout is made to appreciate the lay of the land as indicated primarily by its water system, and secondarily by other natural features, and by the works of man. A good *eye for country* is thus to be acquired; the scout learns to appreciate the configuration of a terrain which may be only partially visible to him, and thus deduce the most favorable routes for traversing it, and the most probable positions for hostile occupation.

The scout must also be taught to distinguish troops of the different arms, to recognize their formations, and to familiarize himself with their usual methods of action. He must acquire the ability to appreciate a tactical situation and to give a clear report of it.

The scout must be trained (*a*) to use field glasses or telescopes; (*b*) to read maps; (*c*) to make reports both verbal and written; (*d*) to make route sketches; (*e*) to make panorama sketches of positions.

CHAPTER III.—AGENTS OF COMMUNICATION.

501. An agent of communication is an officer or enlisted man charged with the duty of keeping a commander and a subdivision of his command in touch with each other. He transmits orders to the subdivision and keeps the commander informed of all matters of importance affecting his subdivision.

502. The duty devolves upon each subdivision to provide the agent of communication for linking it with the next higher chief. The following are the agents regularly called for and permanently detailed in an artillery command:

Between each battery commander and the battalion commander: One corporal.

Between each battalion commander and the regimental commander: One sergeant.

Between each regimental commander and the next higher commander: One officer.

When the artillery operating with a given force consists of a single battery, a single battalion, or a single regiment, then the agent who would have reported to the next higher artillery commander, reports instead to the commander of the troops.

When the larger masses of artillery are involved, if the senior artillery officer is not with the officer commanding the troops, he sends an officer to link him with the latter.

When a command is so situated as to require other agents than those specified above they are detailed by the subdivision commanders concerned. Thus, when the battery reserves and trains are united to form battalion or regimental reserves and trains, the reserve and train commanders each detail an agent to link them with the battalion or regimental commander, as the case may be.

503. The special duties of an agent are:

1. To act as courier.
2. To mark the route.

SECTION I.—*Couriers.*

504. A courier: (a) Makes every effort to keep himself informed as to the location of the subdivision to which he pertains, and as to the route by which it may be most readily reached.

(b) When sent on a mission he notes carefully the country traversed, the facilities and difficulties which it affords for the passage of troops, and endeavors to impress upon his mind the features of the terrain so that he would be able to guide troops through it if called upon to do so.

In pursuing a given route for the first time, it is advisable to turn frequently and observe how objects appear after they have been passed; retracing the same route is thus much facilitated.

(c) He moves promptly when on an errand, and allows nothing to delay or interrupt him. All military persons are required to expedite the movements of such messengers, to provide a fresh mount, if necessary, and point out promptly the best routes for reaching the subdivision or individual sought.

(d) On reaching his destination, if the individual sought is not immediately seen or recognized, he calls out his name or military designation: e. g., "Commanding officer, Battery A,

(e) Having delivered the message, he waits in the presence of the individual receiving it until notified whether or not an answer is to be taken. In case of delay he asks for instructions.

Important messages should always be in writing, and should be acknowledged by the receiver's initials on the envelope with date and time.

Verbal messages should always be repeated by the courier in the presence of the sender before starting on the errand. The message should be couched in concise terms. *The sender should make sure that the courier grasps its spirit and meaning.*

If a courier is aware of the nature of the message carried, and has noted any circumstances bearing upon its subject-matter since leaving the sender, he should, after delivering the message, report the circumstances.

(f) If a courier, after diligent search, is unable to find the individual to whom he is sent, he should return promptly and report the fact to the sender.

It is the duty of all subordinate commanders, however, to notify the next higher commander when circumstances require them to make, without the knowledge of the latter, a material change of position.

(g) A courier should note matters of military interest, especially those affecting the subdivision to which he pertains, and should make report of any essential matters on his return to the officer to whom he is assigned.

If he carries an order directing a change of position of a subdivision, it is often advisable to direct him to accompany the subdivision into the new position so as to enable him to become familiar with the ground and to be able to report upon conditions in the new position.

SECTION II.—*Marking the route.*

505. When an officer precedes his command for reconnaissance or other purposes, or when the parts of a command following the same route are considerably separated, it is incumbent upon the officer or party in front to *mark the route*, so that uncertainty may not arise as to the direction to be followed.

A commander ordinarily employs his agents on this duty; scouts or the members of his staff or noncommissioned staff may likewise be employed. The adjutant, or, in his absence, the sergeant-major, of a battalion or regiment is charged with supervising this duty, and relieving the commanding officer of the necessity of attending to it.

The parts of a column are linked to each other by mounted noncommissioned officers or men left by the leading elements, in turn, at places where uncertainty may arise.

506. A marker is made to understand clearly:

- (a) The route to be followed.
- (b) The particular organization to be guided.
- (c) The message, if any, to be delivered.
- (d) The route he is to follow in order to rejoin the commanding officer.

The marker indicates the correct route, acting as guide if necessary over terrain where the route is difficult to follow, and as soon as his mission is fulfilled hastens to rejoin his commanding officer. If necessary, mounted men may be temporarily taken from the organizations of the command to increase the number of markers. The number employed, however, should always be the minimum consistent with insuring the uninterrupted march of the command.

By the establishment of well-understood conventions, or by the use of suitable signs, the number of markers may be reduced. Thus, it should be understood that a main highway is not, without indication, to be left for a minor road, and that a straight road is not, without indication, to be left for one which deviates from it. By marking arrows on trees and buildings, or by other suitable signs, uncertainties of a minor nature may be removed. In important cases, however, a marker should always be left at places where a reasonable doubt may arise.

CHAPTER IV.—TELEPHONE AND SIGNAL COMMUNICATION.

507. Each battery, battalion, and regimental commander is provided with suitable telephonic and signalling apparatus.

When telephonic communication is to be employed, the exact method of utilizing the material provided—the number of stations to be established, the kind of wire to be used—is determined by the circumstances of the case. If distances are short, hand reels are used; if long, the battalion reel carts are employed. In selecting observing stations, ease and facility in establishing and maintaining communication should be kept in mind; battalion commanders may often post themselves near one of their batteries, regimental commanders near one of their battalions.

508. The following individuals should regularly receive this instruction:

In each battalion: (1) The battalion sergeant-major; (2) the battalion agents of communication (one corporal from each battery); (3) the battery signal details—a corporal and four men from each battery (the corporal is designated as “telephone corporal;” he, as well as the four privates, should be selected for special aptitude, and should then be assigned to the fifth section of their battery; the privates are designated, respectively, No. 1, No. 2, No. 3, No. 4); (4) the scouts (two from each battery).

In each regiment: (1) The regimental sergeant-major; (2) the regimental agents of communication (a sergeant from each battalion); (3) the battalion details above mentioned.

509. Battery communication.—The “telephone corporal” is charged with the establishment and maintenance of battery communication and with the care of the material.

Whenever a battery commander is far enough away from his battery to require telephone or signal communication to be established between him and the battery, the corporal and No. 1 are the operators; the corporal at the battery, No. 1 at the battery commander’s station.

Whenever telephone or signal communication is established between the battery commander and the battalion commander, No. 2 is the operator at the battery commander’s station.

When telephone or signal communication between the battery commander and his battery is not needed, and an auxiliary observing station for the battery is needed, the corporal and No. 1 may be employed for the establishment of communication with such station.

Nos. 3 and 4 are *line guards*, and are habitually mounted.

510. Battalion communication.—The battalion sergeant-major is charged with the establishment and maintenance of communication between the battalion and battery commanders and with the care of the material. During the reconnaissance of the position he receives the battalion commander's instructions as to the nature of the communications required.

If telephones are to be used he examines the ground and determines the best route for the line of wire to follow. On the arrival of the guns in position, or before their arrival, if desirable, he causes the wire to be laid, using the reel cart or the hand reels, as circumstances may require. The operator at each battery commander's station makes the connections necessary for establishing his telephone on the line. The sergeant-major acts as operator at the battalion commander's station.

If a station has also to be established for communication with the regimental commander, one of the agents is designated as operator.

If the battalion commander desires to employ telephonic communication with an auxiliary observing station, one of the scouts is designated as operator at the observing station, while one of the agents is designated as operator at the battalion commander's station.

511. Regimental communication.—The regimental sergeant-major is ordinarily charged with the establishment and maintenance of communication between the regimental and battalion commanders and with the care of the material. During the reconnaissance of the position he receives the regimental commander's instructions as to the nature of the communications required and takes the necessary steps for establishing the same.

If telephonic communication is called for, both in the regiment and in the individual battalions, hand reels may be employed to lay the line in each battalion from battery to battery and thence to the battalion commander's station; and the reel

carts similarly to stretch the line from battalion to battalion and thence to the regimental commander's station. Or such other dispositions may be made as will best adapt the material provided to the needs of the particular case.

The sergeant-major acts as operator at the regimental commander's station.

512. Guarding the line.—Whenever wire is stretched for telephonic communication, line guards must be *immediately* posted. Their duties are to warn all parties approaching the wire of its existence and location, to prevent injury to the line, if possible, and to repair such injury as may occur; for the latter purpose they are provided with the necessary repair kits.

Nos. 3 and 4 of each battery signal detail constitute the line guards.

The telephone corporal in battery communication, the battalion sergeant-major in battalion, and the regimental sergeant-major in regimental communication attend to the assignment of these guards to the various lines of wire which may be stretched.

PART VI.

ARTILLERY IN THE FIELD.

* * * * *

CHAPTER III.—RECONNAISSANCE AND SELECTION OF POSITIONS.

SECTION I.—*Choice of position.*

600. To post the guns so as to be able to carry out effectively the task assigned is always the first consideration in the selection of a position.

Other important considerations are:

1. Securing a large field of fire.
2. Concealment from view.
3. Facility of movement to the front, flanks, and rear.
4. Proximity of good cover for teams, etc.
5. Favorable conditions for resupply of ammunition.

601. By a suitable choice of positions and of observing stations a great part of the terrain within range of the guns may be included within the field of fire. The nature of the case will decide whether direct or indirect laying, or a combination of the two, is to be employed.

602. The existence of dead spaces may be obviated and the field of fire enlarged by the skillful disposition of the units of an artillery command. More or less dispersion of the units is thus in general called for.

By an intelligent dispersion of units, moreover, the effect of the enemy's fire is diminished and his difficulties in adjustment increased; on the other hand, concentration of effort on our own part may be secured by good organization of the services of information and communication.

603. When not incompatible with the effective accomplishment of the duty to be performed, concealment from view is always to be sought. This is true whether direct or indirect

laying is employed. By rendering the guns inconspicuous, or entirely concealing them, their sustained service may be counted upon, while the difficulties of the enemy in locating his targets and adjusting his fire are increased.

604. Skill in the concealment of guns is to be acquired by careful study of ground and by extensive experience on a varied terrain. The following suggestions are to be noted:

Positions which, from the enemy's point of view, are on the sky line are usually the most conspicuous. By placing the guns below the sky line, so that they will have a favorable background, and by preventing movements of the personnel, a battery may be unrecognized even though it is in the open. It is important, however, to have a crest, a hedge, or a clump of trees in front, so as to increase the enemy's difficulties of observation and of exact location. In the absence of natural cover, artificial means may be used to conceal the guns.

A position in rear of a crest, with a parallel crest of about the same height in front and some distance away, offers many advantages. The enemy is apt to mistake the crest nearest him for the one actually occupied and to consider shots falling between the crests as beyond his target. Trees, a hedge, standing grain, etc., four or five hundred yards in front of the guns, and so that the line of sight just passes over them, may similarly serve to deceive the enemy as to our actual position.

When indirect laying is to be employed, a position just far enough behind a gently sloping crest to insure the concealment of the flash best facilitates running the guns up to the crest, should direct laying be called for. If the position is discovered by the enemy, however, and the crest is plainly seen by him, the guns are in a very vulnerable position, as shrapnel may be employed to search such a reverse slope very effectively.

The most advantageous position, from the point of view of concealment alone, is one at least four hundred yards in rear of a covering mass, and hidden from the view of any auxiliary observers of the enemy pushed to the front or flanks.

A defilade of at least twelve feet is necessary for the concealment of the flash.

Keeping the ground in front of the muzzles soaked with water prevents the raising of dust by the blast of discharge.

605. Firing over friendly troops.—Firing over the heads of our own troops is to be regarded as a normal procedure.

Freedom is thus gained to post artillery so as to cover effectively the whole front of combat, to realize the power of concentrating the fire of widely separated units, and to avoid dangerous massing of guns.

606. Ruses.—Dummy emplacements suitably prepared will often serve to deceive the enemy, distract his attention, and cause him to waste ammunition.

A few guns may be sent to occupy advanced positions with a view of drawing the enemy's fire and leading him to disclose his positions and strength. Such guns should be posted with wide intervals; their rapidity of fire may be utilized to produce the impression of constituting a large force of artillery.

SECTION II.—*Reconnaissance.*

607. The duty of locating the enemy and of securing information concerning him devolves in general upon troops of the other arms. It is most essential that the information thus secured should be promptly transmitted to the artillery. As successful cooperative action depends in great measure upon the maintenance of quick and reliable intercommunication between the different elements of a command, artillery commanders should use every means in their power to establish such relations with commanders of the other arms as will insure prompt transmission of information.

608. The artillery must, however, obtain for itself such special information as is needed to insure the proper posting and the effective employment of the guns to carry out the tasks assigned it. For this purpose reconnaissances are made by the artillery commander and his immediate subordinates, assisted by their respective reconnaissance officers and scouts.

The effective action of artillery is enhanced by (a) selecting at once the most favorable positions; (b) making the necessary preliminary dispositions, such as securing firing data, organizing a suitable information and communication service; (c) preparing cover; (d) posting the guns without the knowledge of the enemy; and (e) opening at the proper time a sudden, unexpected, and overpowering fire upon the designated objectives.

When it is necessary to bring guns into action quickly for the support of other troops, the main consideration is to get

them as promptly as possible to a place from which they can render effective support. In such a case delay occasioned by the search for technical and tactical advantages is entirely inadmissible. A good eye for ground and skill in making use of available cover may, however, even here permit an artillery commander to post his guns advantageously.

As a rule, though, the necessity for the employment of artillery may be foreseen, and opportunity may be gained for timely preparation.

609. It is essential that the officer commanding the artillery should be in close touch with the officer commanding the troops; he should accompany him on the preliminary reconnaissance; should be kept constantly informed as to the tactical situation and the plan of action, and should receive early instructions as to the special tasks to be performed by the artillery. Similarly, subordinate artillery commanders should be kept informed of the general plan of action and of the situation so far as it affects them.

At the earliest opportunity the officer commanding the artillery reconnoiters the ground which is to be the scene of action and selects the positions for the artillery in accordance with the instructions which he has received and the tactical requirements of the situation. He causes his immediate subordinate commanders to accompany him, or informs them when and where they are to report to receive their instructions and undertake their own reconnaissances. It is important that they should reach the ground at the earliest practicable moment.

610. In undertaking a reconnaissance an artillery commander should have a clear idea in his mind of the general plan of action and of the task to be accomplished by the force under his command. Unembarrassed by details, he should study the tactical situation and the lay of the ground, select the position with a view to carrying out his special mission, and arrange for the necessary preparatory dispositions. The details of securing information, etc., should be performed by reconnaissance officers and scouts.

611. It is often advisable to attach artillery reconnaissance officers to advance troops in order that they may secure early information as to the enemy, and give the artillery commanders detailed information as to the ground available for occupation by

the artillery and as to the location and disposition of the enemy and of friendly troops. To insure effective cooperative action, such officers may similarly be attached to the infantry firing line during an action, in order to keep the artillery commander informed as to changes in the tactical situation and as to the cooperation desired of the artillery by the infantry.

Reconnaissance officers of the smaller artillery units may be attached to the senior artillery commander, when action is imminent, in order that they may commence, before the arrival of their own immediate commander, the detailed reconnaissance of the position selected for the particular unit concerned. A reconnaissance officer operating in this manner, as well as one who arrives with his immediate commander, examines the neighborhood of the position, locates the enemy, prepares firing data, and, in general, secures the necessary information for his commanding officer and relieves the latter of details.

612. Scouts may, when necessity requires, be employed to perform the duties prescribed for reconnaissance officers, or they may be used to assist the latter and supplement the information secured by them.

613. Reconnaissance duties pertaining to various individuals in a force comprising several battalions of artillery are indicated below; the summary thus given, however, is to be regarded merely as a general guide, and not as specifying all the duties to be performed:

Officer commanding the artillery—

(a) Informs himself as to the enemy's location and dispositions.

(b) Examines the terrain indicated as the general position for the artillery.

(c) Assigns the battalions to duties and to positions in accordance with the proposed plan of action.

(d) Takes general measures to insure intercommunication between the artillery and the other arms, as well as between the elements of the artillery itself.

(e) Takes general measures to insure the support of the artillery and its resupply.

Battalion commander—

(a) Secures by personal observation and by the employment of his reconnaissance officer and scouts information as detailed

as possible as to: The location and disposition of the enemy; the location and disposition of friendly troops; the terrain in the neighborhood of the position—the best methods of approaching it advantageously, its freedom from the enemy, etc.

(b) Examines the general position assigned him, and selects the most suitable positions for the batteries.

(c) Assigns the batteries to duties and to positions.

(d) Determines whether or not artificial cover is necessary, giving the necessary instructions therefor in case of need.

(e) Provides for such auxiliary observing stations as may be needed to secure information as to the effectiveness of our own fire and as to the movements of the enemy and of friendly troops.

(f) Provides for communication with battery commanders and with observing stations.

(g) Makes sure that the security of the position is provided for by adjacent troops or by scouts.

(h) Selects practicable routes for subsequent possible movements to the front, flanks, or rear.

(i) Provides for the resupply of ammunition, selecting a position for the reserve in case the battery reserves are united.

Battery commander—

(a) Examines the target assigned him and studies carefully the ground in its neighborhood.

(b) Examines the ground assigned him for a position and picks out the most suitable place within the limits imposed for posting the guns.

If direct laying is to be employed, he makes sure that each gunner will be able to see through the sights the part of the target to be assigned to him.

If indirect laying is to be employed, he makes sure that each gun will be able to fire over any intervening obstacle, and selects an aiming point, verifying the fact that each gunner will be able to see it through the sight.

(c) Selects a suitable observing station.

(d) Arranges for such battery communications as may be necessary.

(e) Determines the best method of approaching the position, under cover, if possible.

(f) Selects the place for posting his teams.

(g) Selects position for his reserve (whenever the battery reserves are posted separately), doing so with an eye to facilitating the supply of ammunition under cover.

(h) Secures such firing data as may be needed.

(i) Joins his battery and posts it in the position.

The reconnaissance officer—

A reconnaissance officer is, in general, charged with:

(a) Securing by personal reconnaissance (assisted by scouts) such information as to the enemy, our own troops, or the terrain as the officer to whom he is attached may desire.

(b) Supervising the work of scouts, observing parties, etc.

(c) Securing such firing data, preparing such sketches and tabulating such data as may be requisite to assist in the direction and conduct of fire.

(d) Overlooking the field of action, watching for movements of the enemy and of our own troops which may affect the situation, and keeping his commanding officer apprised of changes in the situation.

614. An artillery reconnaissance officer attached to advanced troops should, as soon as possible after the determination of the enemy's location, submit to the artillery commander a report giving such information as is obtainable as to the enemy, and describing the most suitable position for our own artillery. This report should be accompanied by a position sketch in plan, showing the enemy's position, the position selected for our own artillery, the characteristics of the country intervening between the two, the routes by which the selected position may be best approached, and such other important information as may be readily set forth. The report should embrace information such as the following, relative to the position selected: (a) Ease or difficulties of the route of approach, stating difficulties, if any; (b) possibility of approach under cover; (c) whether direct or indirect laying is recommended; (d) cover afforded for guns; (e) need of providing artificial cover; (f) number of guns which may be posted advantageously in the position; (g) facilities for protecting the material, animals, etc.; (h) facility for resupply of ammunition; (i) in case indirect laying is recommended, possibility of securing good aiming points and good observing stations, and of firing over intervening obstacles.

As to the enemy, the report should include information as to:

(a) his apparent numerical strength; (b) what is known as to

the position of his artillery; in the absence of definite information, the probable position of his batteries should be indicated.

615. Whether in a position thus tentatively selected or in one chosen by an artillery commander, a reconnaissance officer is required in appropriate cases to prepare a panorama sketch of the enemy's position. The known positions of the enemy, and prominent features of the landscape as well, are named or numbered on the sketch; copies of such a sketch being sent to the subordinate artillery commanders, the indication of objectives may be facilitated. Firing data is also secured by the reconnaissance officer and that pertaining to each important position shown in the sketch is indicated above it in the margin. When individuals, using such a sketch for identification of positions, are widely separated, allowance must be made for difference in point of view; moreover, in such cases, the firing data should either be omitted from the sketch or should be transformed for use in each position concerned. The position from which the sketch was made should always be plainly described on the sketch.

PART VII.

CEREMONIES.

CHAPTER I.—GENERAL RULES.

1000. On all occasions of ceremony troops are arranged from right to left in line and from head to rear in column in the following order: First, infantry; second, field artillery; third, cavalry. Artillery serving as infantry is posted as infantry; dismounted cavalry and marines are on the left of the infantry in the order named; engineer troops and detachments of the signal corps are on the right of the command to which they are attached; detachments of the hospital corps are assigned to place according to the nature of the service. When cavalry and field artillery or field artillery and infantry are reviewed together without other troops, the artillery is posted on the left. In the same arm, regulars, volunteers, and militia are posted in line from right to left or in column from head to rear in the order named. In reviews of large bodies of troops the different arms and classes are posted at the discretion of the commanding general, due regard being paid to their position in camp. On all other occasions troops of all classes are posted at the discretion of the general or senior commander.

1001. At formations for ceremony sabers are drawn. At ceremonies, mounted, the pieces are in front. Mounted officers in facing toward the line and in resuming their front always execute a left about.

Staff and noncommissioned staff officers, when it is not otherwise prescribed, draw and return saber with their chief.

CHAPTER II.—REVIEWS.

SECTION I.—*General Rules.*

1002. The adjutant or the adjutant-general posts men or otherwise marks the points where the column changes direction,

in such manner that the right flank in passing the reviewing officer shall be about ten yards from him.

1003. The post of the reviewing officer, usually opposite the center of the line, is marked by a flag.

1004. The reviewing officer, his staff, and others at the reviewing stand, salute the standard as it passes whether the standard salutes or not; those with arms not drawn salute by uncovering. The reviewing officer returns the salute of the commanding officer of the troops, and of such commanding officer only.

1005. The staff of the reviewing officer is in single rank, six yards in rear of him, in the following order from right to left: Chief of staff, officers of the general staff corps, adjutant-general, aids, then the other members of the staff in the order of rank, the senior on the right; the flag and orderlies place themselves three yards in rear of the staff, the flag on the right.

1006. Officers of the same or higher grade and distinguished personages invited to accompany the reviewing officer place themselves on his left; their staffs and orderlies place themselves respectively on the left of the staff and orderlies of the reviewing officer; all others who accompany the reviewing officer place themselves on the left of his staff, their orderlies in rear. A staff officer is designated to escort distinguished personages and to indicate to them their proper positions.

1007. When riding around the troops, the reviewing officer may direct that his staff, flag, and orderlies remain at the post of the reviewing officer or that only his personal staff and flag shall accompany him; in either of these cases the commanding officer alone accompanies the reviewing officer. If the reviewing officer is accompanied by his staff, the staff officers of the commander place themselves on the right of the staff of the reviewing officer.

While passing in review or riding around troops a staff is formed in one or more ranks, according to its size.

1008. The staff, flag, and orderlies of brigade commanders place themselves in the order prescribed for the staff, flag, and orderlies of the reviewing officer.

1009. When the reviewing officer is not in front or in rear of a regiment, its commander may cause it to stand *at ease*, to *rest*, or to *dismount and rest*, and to resume *attention* and *mount*, but so as not to interfere with the ceremony.

1010. When the commanding officer of the troops turns out of the column, his post is on the right of the reviewing officer; his staff, in single rank, on the right of the staff already there; his flag and orderlies in rear of his staff.

When the column has passed, the commanding officer, without changing position, salutes the reviewing officer and then with his staff and orderlies rejoins his command.

If the person reviewing the command is not mounted, the commanding officer and his staff, on turning out of the column after passing the reviewing officer, dismount preparatory to taking post on the right of the reviewing officer and his staff. In such case the salute of a commanding officer, prior to rejoining his command, is made with the hand before remounting.

1011. Battalion commanders repeat the commands of their regimental commander.

Whenever the colonel faces the line to give commands, the majors face at the same time; they resume their front after seeing the movement executed. All such commands are executed when they have been repeated by the majors. When the command repeated is *Present saber*, the lieutenant-colonel and the colonel's staff salute at the command of the colonel; the major's staff salutes at the command of the major; the colonel and majors salute after resuming their front; each staff returns to the carry at the command of its chief. The same rules apply to the colonels and majors and to the general's, colonel's, and major's staffs whenever the brigade commander faces the line to give commands.

When passing in review, the staff of each commander salutes and returns to the carry with him.

1012. When the general, the colonel, or the major faces the line to give commands, the staff and orderlies do not change position.

1013. Each guidon, and, when the rank of the reviewing officer entitles him to the honor, each standard salutes at the colonel's command, *Present saber*; and again in passing in review when six yards from the reviewing officer. The standard and the guidons are raised at the command, *Carry saber*, or when they have passed six yards beyond the reviewing officer.

1014. The band of each regiment plays while the reviewing officer is passing in front of and in rear of the regiment.

During the march in review each band, immediately after passing the reviewing officer, turns out of the column, takes post in front of and facing him, continues to play until its regiment has passed, then ceases playing and follows in rear of its regiment; the band of the following regiment commences to play as soon as the preceding band has ceased. The musicians of each regiment, except those pertaining to the regimental and battalion commanders, are consolidated in rear of the band.

If the band be not present the musicians of each regiment, with the exceptions above noted, are consolidated and posted in double rank in a position corresponding to that of the band. They conform to what is prescribed for the band, the chief trumpeter taking post and performing the duties of the drum major.

In a single battalion when no band is present, the musicians of the battalion, with the exception above noted, are formed in single rank and posted as prescribed for the buglers of the regiment, conforming to what is prescribed for them.

This rule applies to all ceremonies.

1015. If the rank of the reviewing officer entitles him to the honor, the *march* or *flourishes* are sounded by the buglers when sabers are presented; and sounded again in passing in review at the moment the standard salutes, by the buglers halted in front of the reviewing officer.

Buglers with the regimental or battalion commanders do not sound the *march* or *flourishes*.

1016. The formation for review may be modified to suit the ground, and the present arms and the ride around the line by the reviewing officer may be dispensed with.

1017. If the post of the reviewing officer is on the left of the column, the troops march in review with the guide left; the commanding officer and his staff turn out of the column to the left, taking post as prescribed above but to the left of the reviewing officer.

1018. Field artillery, except mountain artillery, passes in review at a walk, trot, or gallop. When passing at the trot or gallop, no salutes are made except by the commander of the troops when he leaves the reviewing officer.

Mountain artillery passes in review at the walk only.

1019. When the command is to pass at an increased gait the band (or musicians if no band be present) remains in front

of the reviewing officer and continues to play until the column has completed its second change of direction after passing the reviewing officer. As soon as the increased gait is taken up by the column the band plays in appropriate time, ceasing when the column has again completed the second change of direction after passing the reviewing officer. Upon the completion of the review the band returns to the position it occupied before marching in review or is dismissed, as may be directed. If there be more than one regiment the band of the last regiment in column remains in front of the reviewing officer; the others turn out of the column when the increased gait is taken up by their respective regiments, and rejoin them, or are dismissed on the termination of the review.

NOTE.—When an increased gait is taken up mountain artillery turns out of the column.

1020. In reviews of brigades or larger commands each battalion, after its rear has passed the reviewing officer fifty yards, takes an increased gait for one hundred yards in order not to interfere with the march of the column in rear.

The troops having passed the reviewing officer return to their camps by the most practicable route, being careful not to delay the march of the troops in rear of them.

1021. When field artillery is reviewed in line with cavalry or infantry, it is formed in line with the leading drivers of the sections aligned on the front rank of the infantry or on the rank of cavalry.

At the command *Close ranks, March*, with infantry, or *Attention, posts*, with cavalry, the artillery commander commands: 1. *Attention*; 2. *POSTS*. The chiefs of platoon and standard bearer resume their posts in line.

The forge, store, and kit pack mules do not accompany the batteries at the review. If there be no inspection the mechanics may be assigned for duty as cannoneers.

1022. When it is necessary that an organization should be reviewed before an inspector junior in rank to the commanding officer, the commanding officer receives the review and is accompanied by the inspector, who takes post on his left.

SECTION II.—*Battalion review.*

1023. The battalion being in line, the major faces to the front; the reviewing officer takes his post; the major turns

about and commands: 1. *Prepare for review*; 2. *MARCH*. The staff remains in position, facing to the front.

At the command *March*, the chiefs of platoons, and the standard bearers if present with the standards, move up on the line of captains. Noncommissioned officers acting as chiefs of platoon do not move up on the line of captains.

The major then faces to the front.

The reviewing officer moves a few yards toward the major and halts; the major turns about, commands: 1. *Present*; 2. *SABER*, and again turns about and salutes.

The reviewing officer returns the salute; the major turns about, brings the battalion to carry saber and again turns to the front.

The reviewing officer approaches to within about six yards of the major; the latter salutes, returns saber, joins the reviewing officer, takes post on his right and accompanies him around the battalion. The reviewing officer proceeds to the right of the band, passes along the front of the officers to the left of the line and returns to the right, passing in rear of the line. The reviewing officer and those accompanying him salute the standard when passing in front of it.

While the reviewing officer is riding around the battalion the band plays, ceasing when he leaves the right to return to his post.

On arriving again at the right of the line the major salutes, halts, and, when the reviewing officer and staff have passed, moves directly to his post in front of the battalion, faces it, draws saber, and commands: 1. *Attention*; 2. *POSTS*. The chiefs of platoon and standard bearers execute a left about and take their posts in line. The major commands: 1. *By the right flank*; 2. *MARCH*; 3. *Battalion*; 4. *HALT*. The command *Halt* is given as soon as the teams have completed the wheel. The band takes post thirty-six yards in front of the leading battery.

The column being formed, the major commands: 1. *Pass in review*; 2. *Forward*; 3. *MARCH*; 4. *Guide right*. At the command *March*, the column marches off, the band playing. Without command from the major, the column changes direction at the points indicated, and column of batteries at full distances with guide to the right is formed successively to the left at the second change of direction. The major takes his post twenty-four yards in front of the band, immediately after the second change.

The band having passed the reviewing officer, turns to the left out of the column, takes post in front of and facing the reviewing officer and remains there until the review terminates.

When the major is six yards from the reviewing officer he and his staff salute, turning the head and eyes sharply to the right. When the major has passed six yards beyond the reviewing officer they resume the carry, turning the head and eyes to the front.

The other officers, noncommissioned staff officers and the drum major, salute at the point prescribed for the major, turning the head and eyes as above described. Noncommissioned officers commanding platoons salute with the band.

The reviewing officer returns the salutes of the major and of the standard only.

The major, having saluted, takes post on the right of the reviewing officer, remains there until the rear of the battalion has passed, then salutes and rejoins his battalion. The band ceases to play when the column has completed its second change of direction after passing the reviewing officer.

The review terminates when the rear battery has passed the reviewing officer; the band then ceases to play and rejoins the battalion or is dismissed. The major and his staff rejoin the battalion.

Review of a Battalion with Closed Intervals.

1024. The battalion is formed in line, each battery being at closed intervals. The review is conducted according to the principles previously explained, except that instead of first forming flank column the battalion is formed in column of batteries with closed intervals but full distances and passes in review in that formation.

NOTE.—A mountain artillery battalion, although formed in line with closed intervals, passes in review as already explained (1023), the commands being, in this case: 1. *Pass in review*; 2. *By the right flank*; 3. *MARCH*; 4. *Guide right*.

SECTION III.—*Regimental review.*

1025. The regiment may be formed in line with full or closed intervals, in line of masses or in such other formation as the nature of the ground and the presence of other troops may necessitate.

When the formation is in line with full intervals, the colonel takes post facing to the front; the reviewing officer takes his post; the colonel turns about and commands: 1. *Prepare for review*; 2. *MARCH*. The battalions are prepared for review as prescribed under Battalion Review. The review then proceeds as in the battalion review, substituting *colonel* for *major* and *regiment* for *battalion*.

In riding around the regiment, the reviewing officer passes to the left in rear of the line of majors, then returns in rear of the line of carriages to the right.

At the second change of direction each major takes post twenty-four yards in front of his leading battery. When at closed intervals, this distance is suitably reduced.

1026. When the regiment is formed in line with closed intervals, the rules for the review of a battalion in line with closed intervals apply.

1027. When in line of masses or other formation, the review is conducted according to the same principles, each battery being placed in march in time to follow the preceding one at the proper distance.

SECTION IV.—*Brigade review.*

1028. The brigade is formed and prepared for review as explained for the regiment. The brigade commander and staff take post about thirty yards in front of the line of colonels, when in line; about thirty yards in front of the leading colonel, when in column.

The review is conducted according to the principles laid down for regimental review, the brigade commander taking post twenty-four yards in front of the leading colonel when at about one hundred yards from the reviewing officer.

SECTION V.—*Garrison review.*

1029. A review of a body of troops less than a division, composed of different arms, is conducted on the principles laid down for a regiment.

The senior officer present commands the review; the senior officer present with each arm commands that arm. The troops of each arm form on the line according to the principles prescribed in the Drill Regulations for that arm.

Each commander gives the commands necessary to carry out the orders of the officer commanding the review.

The commanding officer, having saluted, turns out and joins the reviewing officer. The other commanders do not turn out of the column.

CHAPTER III.—INSPECTIONS.

SECTION I.—*General Rules.*

1030. The inspector prescribes the kind of inspection which he desires.

1031. If there be both inspection and review, the inspection may either precede or follow the review.

When an inspection follows a review with the other arms the field artillery proceeds, at the proper time, to the place designated by the inspector and is inspected separately.

SECTION II.—*Battery Inspection, Mounted.*

1032. The battery being in line, the captain commands: 1. *Prepare for inspection*, 2. **ACTION FRONT.**

The order in battery (374) is formed, the matériel of the third platoon disposed as in park (383), the breechblocks being left open until inspected.

The chiefs of the first and second platoons take post opposite the center and four yards in front of the line of muzzles of their platoons. The chief of the third platoon takes post opposite its center on line with the other chiefs of platoon.

The teams being in position, the captain commands: *Right dress*, verifies the alignment of the officers, the guns and the teams, commands: *Front*, and posts himself, when not acting as inspector, eight yards in front of the line of muzzles, opposite the center of the battery.

If the ammunition and supply trains are present they are held on the left flank under their proper commanders, but are not unpacked unless specially directed by the inspector, in which case cargoes are disposed in prolongation of the line of guns and the pack mules are herded in prolongation of the line of

teams. The mechanics are with the ammunition train, the cooks with the supply train.

If no train is present all the personnel are posted as already prescribed (377-380), with the exceptions stated above.

Chiefs of platoon cause all tools and spare parts to be exhibited for inspection.

When acting as inspector the captain inspects the chiefs of platoon from right to left; then the quartermaster-sergeant, stable sergeant, and chief mechanic; passes by the rear of the battery to the post of the first sergeant and inspects him; thence by the rear of the battery to the right flank, where he returns saber and inspects the musicians and guidon.

He goes to the right section of the right platoon and inspects the section, commencing with the chief of section, passing in order to the ammunition, the gun, and the teams. He then similarly inspects the other sections in order from right to left.

When the captain commences the inspection of the right platoon the chiefs of the other platoons cause their platoons to stand *at ease*, calling them to *attention* as the captain approaches their platoons. Each chief of platoon accompanies the captain during the inspection of his platoon. As soon as a platoon is inspected its commander causes it to take the *march order* and then to stand *at ease*. The platoon commander faces his platoon while *at ease*.

The inspector may cause mounted men to dismount and may conduct all or any part of his inspection on foot.

The inspection being completed the battery is packed and dismissed or otherwise disposed of as the inspector may direct.

1033. The battery carries for inspection every article that is prescribed as part of its regular equipment and for which there is a specially designated place assigned.

The battery will be inspected frequently in full marching order.

1034. Should the inspector be other than the captain the latter, having prepared his battery for inspection and taken his post, salutes when the inspector arrives in front of him. The inspector returns the salute, inspects the captain, and then inspects the battery in the order just prescribed. As soon as inspected the captain returns saber and accompanies the inspector.

Battery Inspection, Dismounted.

1035. The battery being in line, the officers at carry saber, the captain causes the ranks to be opened and commands: 1. *Inspection*; 2. *PISTOL*. Each man as the inspector approaches him executes *inspection pistol*.

1036. The captain returns saber, inspects the chiefs of platoon, the front rank, the rear rank, and the file closers, beginning on the right of each and returning by the left and rear. During the inspection of the ranks the lieutenants face about and stand at ease; they may be directed to accompany the captain or to assist in the inspection. Upon the completion of the inspection the lieutenants face to the front and resume the attention; the captain closes the ranks and dismisses the battery.

1037. Should the inspector be other than the captain the latter opens ranks and, when the inspector approaches, brings the battery to attention, faces to the front and salutes. The salute acknowledged, the captain carries saber, faces about, commands: 1. *Inspection*; 2. *PISTOL*, and again faces to the front.

The inspection proceeds as before; the captain returns saber and accompanies the inspector as soon as the latter has inspected him.

At inspection of quarters the inspector is accompanied by the captain and followed by the other officers, or by such of them as he may designate; the men, without accouterments, stand uncovered near their respective bunks; in camp they stand covered, without accouterments, in front of their tents; upon the approach of the inspector the first sergeant commands: *ATTENTION*, salutes and leads the way through the quarters or camp.

SECTION III.—Battalion inspection.

1038. The battalion being in column of batteries, on the approach of the inspector the major commands: 1. *Prepare for inspection*; 2. *MARCH*.

The batteries are prepared for inspection as already prescribed.

The buglers join their batteries. The drum major conducts the band, if there be one, to the rear of the column, passing

by the right flank, and places it facing to the front thirty-six yards in rear of the rear battery and opens ranks.

The battalion staff officers place themselves in line with one yard intervals, about forty yards in front of the column, opposite the center, in order of rank from right to left; the non-commissioned staff form in a similar manner six yards in rear of the staff officers; the guard of the standard marches to the front and takes post six yards in rear of the center of the line of the noncommissioned staff. The major takes post in front of the center of the column six yards in front of the staff.

Field and staff officers senior in rank to the inspector do not take post in front of the column, but accompany him.

The inspector inspects the major and, accompanied by the latter, inspects the staff officers.

The major and his staff, as soon as inspected, return saber and accompany the inspector. The noncommissioned staff officers do not return saber until inspected.

The inspector, commencing at the head of the column, inspects the noncommissioned staff, guard of the standard, and band. The noncommissioned staff and guard of the standard may be dismissed as soon as inspected.

The captain of each battery not undergoing inspection brings the men to *rest*. As the inspector approaches the battery the captain brings it to attention; as soon as he himself has been inspected he returns saber and accompanies the inspector. The inspector proceeds as in Battery Inspection. At its completion the captain brings the battery to rest. Upon intimation from the inspector the major may direct that each battery in turn be dismissed as soon as inspected.

The band plays during the inspection of the batteries.

When the inspector approaches the band the adjutant commands: 1. *Inspection*, 2. *INSTRUMENTS*, and the band is inspected as prescribed in paragraph 1085.

1039. The battalion may be inspected in line. The inspection is conducted according to the same principles as when formed in column. The major and his staff are inspected at their posts in front of the center of the line; the band, which remains at its post on the right, is next inspected; then the batteries in order from right to left.

1040. If the major is himself the inspector the inspection is conducted according to the same principles.

SECTION IV.—*Regimental inspection.*

1041. The commands and means are the same as prescribed for a battalion.

In column the staff of the colonel forms in line at intervals of one yard about thirty yards in front of the major of the first battalion, the adjutant on the right, the other staff officers in order of rank from right to left. The lieutenant-colonel is on the right of the staff. In line these officers form similarly sixty yards in front of the center of the regiment. The noncommissioned staff forms in a corresponding manner six yards in rear of the commissioned staff; the guard of the standard takes post six yards in rear of the center of the line of noncommissioned staff. The colonel takes post twelve yards in front of the center of his staff.

The inspector inspects the colonel, and, accompanied by the latter, inspects the lieutenant-colonel and staff officers.

The colonel, lieutenant-colonel, and staff, as soon as inspected, return saber and accompany the inspector.

Commencing at the head of the column, the inspector inspects the noncommissioned staff, guard of the standard, each battalion in succession, and the band.

The major of a battalion not undergoing inspection brings the battalion to rest. On the approach of the inspector the major brings his battalion to attention and accompanies the inspector through his battalion. The inspection is conducted as in Battalion Inspection, each captain resting his battery while not undergoing inspection.

When the inspection of a battalion is completed the colonel, upon intimation from the inspector, may direct that the battalion be marched off and dismissed.

The adjutant gives the necessary commands for the inspection of the regimental noncommissioned staff, guard of the standard, and band.

Each battalion adjutant gives the necessary commands for the inspection of the battalion noncommissioned staff.

CHAPTER IV.—MUSTER.

Regimental, Battalion, or Battery Muster.

1042. Muster is held in line or in column of batteries, each in the order in battery.

The adjutant is provided with the muster roll of the field, staff, and band; each captain, with the roll of his battery. A list of absentees alphabetically arranged showing cause and place of absence accompanies each roll.

As the mustering officer approaches a battery, its captain commands: **ATTENTION TO MUSTER.** The mustering officer or the captain then calls the names on the roll, and as each man's name is called, he answers *Here*. After muster the mustering officer verifies the presence of the men reported in hospital, on guard, etc.

If a battery be mustered dismounted the ranks are opened, and as each man's name is called he answers *Here* and steps one pace to the front.

CHAPTER V.—ESCORTS.

SECTION I.—*Escort of the standard.*

1043. The regiment being in line, the colonel details a battery to receive and escort the national standard to its place in line. During the ceremony the regimental standard remains with the guard of the standard at its post with the regiment.

The escort is formed in flank column, the band in front, the national standard bearer at the center of the column. The escort then marches without music to the colonel's office or quarters, is formed in line facing the entrance and halted, the band on the right, the standard bearer midway between the two center sections on a line with the muzzles.

The senior lieutenant, standard bearer, and a sergeant designated by the commander of the escort dismount in front of the colonel's quarters, their horses being held by a bugler. The standard bearer, preceded by the first lieutenant and followed by the sergeant, then goes to receive the standard.

The standard bearer comes out, followed by the lieutenant and sergeant. They mount and form facing the center of the escort, the lieutenant on the right, the sergeant on the left, the

bugler returning to his post. The captain then commands: 1. *Present*; 2. **SABER**; the officers of the escort present saber, the musicians with the band sounding *to the standard*, and the guidon saluting.

The sabers are brought to the carry; the lieutenant and sergeant return to their posts; the battery executes *by the right flank*, the band conforming to the movement, the standard bearer placing himself at the center of the column.

The escort marches with the guide left back to the regiment, the band playing. The march is so conducted that when the escort arrives at fifty yards in front of the right of the regiment the direction of the march shall be parallel to its front. When the standard arrives opposite its place in line the escort is formed in line to the left and halted. The standard bearer, passing between the sections, advances and halts twelve yards in front of the colonel.

The standard bearer having halted, the colonel, who has posted himself forty yards in front of the center of his regiment, faces the line and commands: 1. *Present*; 2. **SABER**. At this command officers and noncommissioned staff officers present saber. The regimental standard and the guidons execute the prescribed salute. The colonel faces to the front and salutes, the musicians sounding *to the standard*. As soon as the colonel has saluted the national standard bearer executes the prescribed salute.

The colonel then faces about and commands: 1. *Carry*; 2. **SABER**. At the second command the carry is resumed. The standard bearer moves at a walk toward the regiment, and passing by the left of the guard of the standard executes a left about and takes his place in the guard.

The escort presents and carries saber, with the regiment, at the command of the colonel. As soon as the standard has reached its place in line the captain forms the escort in column and marches it, preceded by the band, to its place in line, passing around the left flank of the regiment.

The band plays until the escort passes the left of the line, when it ceases playing and returns to its place on the right, passing in rear of the regiment.

The regiment may be brought to *rest* after the escort has passed the left of the line.

1044. If but one battalion of the regiment is present, *escort of the standard* is executed according to the same principles.

1045. If it is impracticable for the battery detailed as escort to approach the colonel's quarters or office and to form opposite it as above described, then the battery is marched to the most suitable place near by and there formed. The standard is then brought out as before, and is similarly saluted and received by the escort.

SECTION II.—*Funeral escort.*

1046. The composition and strength of the escort are prescribed in Army Regulations.

The escort is formed with its center opposite the quarters of the deceased, the gun squads in front (71), the band (or musicians) on that flank of the escort toward which it is to march.

Upon the appearance of the coffin the commander of the escort commands: 1. *Present*; 2. *SABER*, and the band plays an appropriate air; sabers are then brought to the carry.

The cannoneers are then posted and the escort is formed in flank or section column.

The procession is formed in the following order: 1. Music; 2. Escort; 3. Clergy; 4. Coffin and pallbearers; 5. Mourners; 6. Members of the former command of the deceased; 7. Other officers and enlisted men; 8. Distinguished persons; 9. Delegations; 10. Societies; 11. Civilians.

Officers and enlisted men (Nos. 6 and 7), with side arms, are in the order of rank, seniors in front.

The escort marches at a walk to solemn music, and on arriving at the grave is formed in line with the center opposite the grave; the gun squads are next brought to the front; the coffin is then carried along the front of the escort to the grave, sabers are presented, and the band plays an appropriate air; the coffin having been placed over the grave, the music ceases and sabers are carried.

The commander next commands: 1. *Parade*; 2. *REST*.

At the second command the gun squads execute *parade rest* and incline the head.

After the coffin is lowered into the grave and the funeral services are completed the commander of the escort commands: 1. *Battery* (or ———); 2. *ATTENTION*, orders the cannoneers to take their posts and then fires three salvos with blank car-

tridges. After the last salvo a bugler sounds taps over the grave.

The escort is then formed into column, marched to the point where it was assembled, and dismissed.

The band does not play until it has left the enclosure.

The funeral ceremony for an enlisted man is the same as for an officer, except that the commands *Present* and *Carry saber* are omitted; the sergeant in command of the escort salutes with the hand on the appearance of the coffin at the quarters of the deceased and also when the coffin is carried along the front of the escort to the grave.

1047. When the distance to the place of interment is considerable, the escort after leaving the camp or garrison may march *at ease* until it approaches the burial ground, when it is brought to attention. The music does not play while marching *at ease*.

In marching at attention the field music may alternate with the band in playing.

1048. When it is impracticable for the teams to approach the grave, they are left outside the enclosure. If the escort consists of artillery only, the officers, noncommissioned staff officers, first sergeants, quartermaster sergeants, stable sergeants, and musicians dismount, turn over their horses to the drivers, and the officers and noncommissioned staff officers draw saber; the gun squads are next formed in column of squads; the coffin is then escorted to the grave, where line is formed and the same ceremonies are performed as before prescribed. The ceremony at the grave having been completed, the gun squads are marched to the guns and three salvos are fired; after the last salvo a musician sounds taps over the grave.

1049. Should the entrance to the cemetery prevent the hearse accompanying the escort till the latter halts at the grave, the column is halted at the entrance long enough to take the coffin from the hearse, when the column is again put in march. The cavalry and artillery of the escort, when unable to enter the enclosure, turn out of the column and salute the coffin as it passes.

1050. In all funeral ceremonies six pallbearers will be selected as far as practicable from the grade of the deceased.

If the deceased is a commissioned officer, the coffin is borne by six noncommissioned officers; if a noncommissioned officer or private, by six privates.

1051. When arms are presented at the funeral of a general officer, the field music sounds the *march* or *flourishes*, according to the rank of the deceased, after which the band plays an appropriate air.

After the remains are deposited in the grave a salute corresponding to the rank of the deceased will be fired, in addition to three salvos of artillery or three volleys of musketry.

1052. At the funeral of a mounted officer or enlisted man, his horse, in mourning caparison, follows the hearse.

1053. When necessary to escort the remains from the quarters of the deceased to the church before the funeral service, arms are presented upon receiving the remains at the quarters and also as they are borne into the church.

1054. Before the funeral the commander of the escort gives the clergyman and pallbearers all needed directions.

CHAPTER VI.—PRESENTATION TO THE STANDARD.

1055. At least once a year the recruits of the regiment will be formally presented to their standard.

For this purpose the regiment will be formed in line of masses dismounted, the recruits who have joined since the last presentation being posted on the left of their respective batteries. At an intimation from the adjutant, and under his supervision, the recruits of each battery are marched to the front and center by noncommissioned officers designated for the purpose, and formed in line midway between the colonel and the regiment. The noncommissioned officers, after halting and aligning their squads, take post in the line of file closers.

The national and regimental standards are brought by the guard of the standard from the colonel's quarters or office and posted twelve yards in front of the colonel facing him, when honors are rendered as in the ceremony of *escort of the standard*.

On the conclusion of the Salute the colonel faces about and addresses the recruits in remarks appropriate to the occasion. He then commands: 1. *CARRY*; 2. *SABER*; 3. *DISMISS YOUR BATTERIES*. The standard is escorted by the guard of the standard

to the colonel's office or quarters; the squads are marched to the batteries, and the batteries are marched off by their captains and dismissed.

CHAPTER VII.—BATTERY GUARD MOUNTING.

1056. At the *assembly* the men warned for stable and park guard duty fall in on the battery parade ground in two ranks, facing to the front; the noncommissioned officers and supernumerary fall in as file closers; the first sergeant then verifies the detail, inspects the dress and general appearance of the men, and replaces by the supernumerary any man unfit to march on guard. If the supernumerary be no longer required, he is dismissed.

1057. The musicians take post on the battery or garrison parade ground.

At *adjutant's call* the new battery officer of the day, who mounts the guard, takes post so as to be six yards in front of and facing the center of the guard when formed.

The first sergeant marches his detail to the parade ground, the musicians sounding a march in quick time, and halts the detail in line so that the front rank man of the right file shall be two yards to the left of the left musician; he then places himself two yards in front of the center of the detail, salutes, and reports to the officer: *Sir, the detail is correct*; or *Sir*, (so many) *noncommissioned officers and privates are absent*; he then faces to the left and takes post two yards to the left of the front rank.

The officer then draws saber and commands: 1. *Open ranks*; **MARCH.**

At the command *March*, the ranks are opened, the front rank dresses to the right, the rear rank steps back two yards, halts, and dresses to the right; the senior noncommissioned officer places himself on the right of the front rank; the other noncommissioned officers two yards in rear of the rear rank. The officer verifies the alignment of both ranks and commands: **FRONT**, and 1. *Inspection*; 2. **PISTOL**, returns his saber, and inspects the guard.

If any man does not present a creditable appearance the officer directs the first sergeant to replace him after the guard is mounted.

The inspection being finished, the officer places himself six yards in front of and facing the center of the guard, draws his saber, and commands: 1. *Parade*; 2. *REST*; 3. *SOUND OFF*, and comes to a parade rest.

The musicians sound off, remaining on the right of the guard.

The officer then comes to a carry and commands: 1. *Guard*; 2. *ATTENTION*; 3. *Close ranks*; 4. *MARCH*; 5. *Guard to its post*; 6. *Right*; 7. *FACE*; 8. *Forward*; 9. *MARCH*.

At the ninth command the guard moves to its post, preceded by the musicians, who sound a march in quick time; the senior noncommissioned officer marches near its left and rear, so as to observe its movements; if there be a file closer he takes his place as guide. The officer returns saber; the first sergeant salutes, and the officer returns the salute; they then retire.

1058. As the new guard approaches the guardhouse the old guard is formed in line, its commander on the right of the front rank; when the new guard arrives nearly opposite it, the commander of the old guard salutes.

The new guard marches in quick time past the old guard, the commanders saluting.

The musicians having marched three yards beyond the right of the old guard, change direction to the right and, followed by the guard, change direction to the left when on a line with the file closers of the old guard; the changes of direction are without command. The commander of the new guard halts on the line of the front rank of the old guard and allows his guard to march past him; when its rear, after having changed direction to the left, approaches, he halts the guard, faces it to the left, places himself three yards to the right of the old guard and in line with its front rank, and then dresses the guard to the left; the buglers are two yards to the right of its front rank.

The new guard being dressed, the commanders of the old and new guard look toward each other and salute.

1059. The commander of the new guard now divides the guard into three reliefs, numbers them first, second, and third from right to left, and directs a list of the guard to be made; he then takes possession of the guardhouse or guard tent and the articles and prisoners under charge of the guard.

While the sentinels are being relieved the two guards stand at ease and the commander of the old guard gives to the com-

mander of the new guard all the information and the instructions relating to his guard.

1060. The first relief having been designated, its corporal commands: **CALL OFF**. Beginning on the right the men call off alternately in the rear and front rank: One, two, three, four, and so on; the corporal then commands: 1. *Right*; 2. *FACE*; 3. *Forward*; 4. *MARCH*.

The corporal marches on the left and near the rear file in order to observe the march. The corporal of the old guard marches on the right of the leading file and takes command when the last one of the old sentinels is relieved, changing places with the corporal of the new guard.

When the relief arrives at fifteen yards from a sentinel he halts and faces toward it; at six yards from him the corporal commands: 1. *Relief*; 2. *HALT*. The corporal then adds, according to the number of the post: 1. *Number* (———); 2. *POST*.

The new sentinel approaches the old and halts at about one yard from him. The old sentinel, under supervision of both corporals, gives in a low tone his instructions to the new sentinel.

The corporal then commands: 1. *Forward*; 2. *MARCH*.

As the relief passes, the old sentinel takes his place in rear; the other sentinels are relieved in a similar manner.

The sentinel at the guardhouse is the first relieved and is left behind.

1061. The sentinels of the old guard having come in, form on its left; the musicians place themselves two yards to the right of the old guard on line with the front rank; the commander of the old guard places himself two yards in front of its center; the commander of the new guard places himself on the right of its front rank; the commander of the old guard then marches it with the guide right six yards to the front, when he commands: 1. *By the right flank*; 2. *MARCH*. At the command *March*, the guard faces to the right, the musicians begin to sound, and the guard marches in quick time past the new guard, the commanders of both guards saluting; the old guard is then marched to the battery parade ground and dismissed.

The commander of the new guard then makes himself acquainted with all the instructions for his guard, visits the

sentinels and questions them relative to the instructions they have received from the old guard.

1062. The battery officers of the day visit and inspect the guardhouse or tents while the old guard is being relieved, verify the number of prisoners, and then proceed to the office or presence of the battery commander, who receives the report of the old officer of the day, relieves him, and gives his instructions to the new officer of the day.

1063. In visiting the guardhouse each officer of the day is saluted by the commander of his own guard.

When other officers entitled to a salute approach, the commander of each guard salutes.

1064. In rendering honors the guard is brought to *attention* and the commander salutes.

1065. In bad weather, at night, or after long marches the music may be dispensed with at the discretion of the battery commander.

CHAPTER VIII.—MISCELLANEOUS.

SECTION I.—*The Guidon.*

Manual of the Guidon.

1066. *The position of carry guidon, dismounted.*—The lance of the guidon is held vertically in the right hand, thumb in front of the lance, forefinger along the side, ferrule about six inches from the ground. It is thus carried in marching.

When leading the horse the lance is held in a corresponding position in the left hand.

1067. *The position of order guidon.*—The ferrule of the lance rests on the ground on a line with and touching the toe of the right shoe; the right hand grasps the lance in the same manner as when at a carry.

1068. *The position of parade rest.*—The ferrule of the lance is on the ground as at the order; the lance is held with both hands in front of the center of the body, left hand uppermost.

1069. *To mount and dismount; the position of carry guidon, mounted.*—At stand to horse the ferrule of the lance rests on the ground on a line with and touching the toe of the left shoe, lance vertical and supported by the left hand; hand at the height of the neck, elbow and forearm closed against the lance.

Preparatory to mounting, grasp the reins and a lock of the mane in the left hand, lance held in the same hand, reins on the near side of the lance; place the right hand on the pommel and mount in the usual manner. After mounting, grasp the lance with the right hand under the left, which lets go of it without quitting the reins; carry the lance to the right side, lower and place the ferrule in the stirrup socket. The right hand then grasps the lance, forearm nearly horizontal, the arm through the sling, lance vertical; this is the position of *carry guidon, mounted*.

Dismounting with the guidon is executed in a manner the reverse of the foregoing.

1070. Salutes.—Being mounted: Lower the guidon to the front until the lance (under the right arm) is horizontal.

Being dismounted: Slip the right hand up the lance as high as the eye, then lower the lance to the front by straightening the right arm to its full extent.

If marching, the salute is executed when at six yards from the officer entitled to the salute; the carry is resumed after passing six yards beyond him.

At the halt the salute is executed at the command *Present saber*; the carry is resumed at the command *Carry saber*.

SECTION II.—*The standard.*

1071. Whenever in these regulations the term *the standard* is used it includes both the national and the regimental standards; if either alone is to be referred to, the term *the national standard* or *the regimental standard* is used.

1072. The manual of the standard is as prescribed for the guidon except that at carry standard, dismounted, the ferrule of the lance is supported at the right hip.

The standard salutes in the ceremony *escort of the standard* and when saluting an officer entitled to the honor, but in no other case.

1073. The guard of the standard.—The guard of the standard consists of the color sergeants and of two experienced men selected by the colonel. The guard is habitually formed in line, the color sergeants in the center.

The national standard is carried by the senior color sergeant, who is nearest to the right flank of the guard and who commands the guard. The regimental standard is carried by the other color sergeant. The latter conforms to the movements of the former, maintaining his position on the left.

The standard, kept at the quarters or office of the colonel, is escorted by the guard to the place of formation of the regiment and is similarly returned.

1074. *Post of the standard.*—At the formation of the regiment, as soon as the battalions have taken their places, the guard of the standard takes post midway between the two battalions—in line, abreast of the leading drivers of the leading teams; in column, at the center of the column.

If the formation of the regiment is changed from line to column or the reverse, the standard conforms to the movement, taking its new position by the most direct route.

When during exercises the regimental formation is broken up, the standard joins the colonel or is dismissed, as may be directed by the adjutant. On the march the standard is six yards in rear of the regimental staff, unless otherwise directed.

If the regiment is subdivided for action, the standard takes post as directed by the adjutant.

If only one battalion of the regiment is present, the standard takes post at the formation midway between the center and left (or rear) batteries of the battalion. If the order of the batteries in line or column is reversed, it maintains its relative position with respect to these two batteries. The standard conforms in other respects to what is above prescribed.

SECTION III.—*The saber.*

1075. Officers, regimental and battalion noncommissioned staff officers and the drum major are armed with the saber.

At ceremonies sabers are habitually drawn. In route marches they are habitually in the scabbard. At other times they are drawn or in the scabbard in the discretion of the officer in command; when he draws or returns saber, officers and non-commissioned staff officers under his command draw and return saber with him.

For dismounted duty the saber is attached to the belt, and is kept hooked up except when drawing and returning saber.

For mounted duty the saber is habitually attached to the left side of the saddle; in full dress it is attached to the belt, unless otherwise directed by the commanding officer. The saber is not removed from the saddle when dismounting temporarily for the performance of some duty on foot.

1076. To draw the saber; the position of carry saber.—Unhook the saber with the thumb and first two fingers of the left hand, thumb on the end of the hook, fingers lifting the upper ring; grasp the scabbard with the left hand at the upper band, bring the hilt a little forward, seize the grip with the right hand and draw the saber quickly, raising the arm to its full extent to the right front at an angle of about forty-five degrees with the horizontal, the saber edge down, in a straight line with the arm; make a slight pause and bring the back of the blade against the shoulder, edge to the front, arm nearly extended, hand by the side, elbow back, third and fourth fingers back of the grip; at the same time hook up the scabbard with the thumb and first two fingers of the left hand, thumb through the upper ring, fingers supporting it; drop the left hand by the side. *This is the position of carry saber dismounted.*

To draw the saber when mounted, reach with the right hand over the bridle hand, and, without the aid of the bridle hand, draw the saber as before. The right hand at the carry rests on the right thigh.

1077. The saber if drawn is, while at attention, habitually held at the carry, except when dismounted and moving in double time; in the latter case it is carried diagonally across the breast, edge to the front, the left hand steadying the scabbard.

1078. Being at carry saber: 1. *Present*; 2. **SABER.**

For officers: At the command *Present*, raise and carry the saber to the front, base of the hilt as high as the chin and six inches in front of the neck, edge to the left, point six inches farther to the front than the hilt, thumb extended on the left of the grip, all the fingers grasping the grip. At the command *Saber* lower the saber, point in prolongation of the right foot and near the ground, edge to the left, hand by the side, thumb on left of grip, arm extended. If mounted, the hand is lowered behind the thigh, point a little to the right and front of the stirrup.

For enlisted men: Execute at the command *Saber* what is above prescribed for officers at the command *Present*, and retain

the saber in the raised position until the second command of *Carry saber*.

1079. Being at present saber: 1. *Carry*; 2. *SABER*.

At the command *Saber*, resume the position of carry saber.

1080. Being at carry saber: 1. *Parade*; 2. *REST*.

Take the position of parade rest (par. 48), point of saber on or near the ground in front of the center of the body, edge to the right.

At the command *Attention*, resume the carry saber and the position of the soldier.

1081. To return saber.—Carry the right hand opposite to and six inches from the left shoulder, saber vertical, edge to the left; at the same time unhook and lower the scabbard with the left hand and grasp it at the upper band; drop the point to the rear and pass the blade across and along the left arm; turn the head slightly to the left, fixing the eyes on the opening of the scabbard, raise the right hand, insert and return the blade; turn the head to the front, drop the right hand by the side, hook up the scabbard with the left hand, drop the left hand by the side.

When mounted the saber is returned without using the left hand.

1082. At inspection enlisted men, with the saber drawn, execute at the approach of the inspector the first motion of *Present saber* and turn the wrist to show the other side of the blade, resuming the carry when the inspector has passed.

SECTION IV.—*The band.*

1083. The band is generally formed in column of fours. It may be formed in two or more ranks.

Dismounted, the band is formed in two or more ranks, with sufficient intervals between the men and distances between the ranks to permit a free use of the instruments.

The drum major is three yards (dismounted, two yards) in front of the center of the front rank. He gives the commands or signals for its movements. The commands are the same as for a squad, substituting in them *band* for *squad*.

In line the band is posted with the left of its front rank thirty-six yards to the right of the right battery. In column it marches with its rear rank thirty-six yards in front of the

leading battery or its front rank thirty-six yards in rear of the rear battery, according as the column has been formed to the right or to the left.

Dismounted, the band takes post as when mounted.

When united the musicians form in rear of the band. When the band is not present the posts, movements and duties of the musicians are the same as prescribed for the band.

In rendering honors, whenever the standard salutes, the musicians sound the *march, flourishes* or *to the standard*, at a signal from the drum major.

In marching the different ranks dress to the right.

When the command with which the band is posted faces to the rear the band executes the countermarch. The intervals are increased before executing a countermarch and closed upon the completion of the countermarch.

In executing the countermarch, the men in the leading rank, or four to the right of the drum major, turn individually to the right about, and those to his left to the left about, each followed by the men covering him in the column. The drum major passes through the center.

In dismounted formations, when right, left, or about face is executed, the band faces in the same manner.

Signals of the Drum Major.

1084. The signals for the movements of the band will correspond to the saber signals (par. 406) as far as practicable.

Prepare to play: Take the first position of present saber.

Play: Thrust upward energetically with the saber, arm fully extended, and quickly resume the carry.

Prepare to cease playing: Same as prepare to play.

Cease playing: Same as play.

The march or flourishes.—1. *Prepare to play:* Raise the hand to the height of the forehead and hold the saber in a horizontal position, point to the left.

2. *Play:* Lower the hand quickly to the belt and resume the carry.

Increase intervals: Extend the arm to the front, and wave the saber several times to the right and left in front of the body.

To Inspect the Band.

1085. Being at the halt: 1. *Open ranks*; 2. *MARCH*; 3. *FRONT*.

The front rank dresses to the right; the other ranks move backward, each taking the distance of three yards (dismounted, two yards) from the rank preceding, halt and dress to the right.

1. *Inspection*; 2. *INSTRUMENTS*.

Each musician, as the inspector approaches him, raises his instrument in front of his body, reverses it so as to show the other side, and then returns it to its former position.

A bugler, when inspected, executes with his bugle what is prescribed for a band musician.

1. *Close ranks*; 2. *MARCH*.

The front rank stands fast, the other ranks move up and close to the proper distance.

SECTION V.—*Honors*.

1086. The officers named below are received with standards and colors drooping, officers and troops saluting, and the bands and field music playing, as follows: The President, the President's March; the General, the General's March; the Lieutenant-General, bugles sounding three flourishes or drums beating three ruffles; a major-general, two flourishes or two ruffles; a brigadier-general, one flourish or one ruffle.

1087. To the Vice-President, the members of the Cabinet, the Chief Justice, the President of the Senate, the Speaker of the House of Representatives, American or foreign ambassadors, and governors within their respective States and Territories, the same honors are paid as to the General; to the Assistant Secretary of War and to American or foreign envoys or ministers, the same honors as to the Lieutenant-General; to officers of the Navy, the honors due to their relative rank; to officers of marines and volunteers, and militia when in the service of the United States, the honors due to like grades in the regular service; to officers of a foreign service, the honors due to their rank.

1088. The national or a regimental color or standard, uncased, passing a guard or other armed body is saluted, the field music sounding *to the color*, or *to the standard*. Officers or enlisted men passing an uncased color or standard render the pre-

scribed salute; with no arms in hand the salute is made by uncovering, the headdress being held in the right hand opposite the left shoulder, right forearm against the breast.

1089. Whenever "The Star Spangled Banner" is played by the band on a formal occasion at a military station, or at any place where persons belonging to the military service are present in their official capacity, all officers and enlisted men present stand at attention, and if not in ranks render the prescribed salute. The same respect is observed toward the national air of any other country when it is played as a compliment to official representatives of such country.

Whenever "The Star Spangled Banner" is played as contemplated in this paragraph the air will be played through once without the repetition of any part except such repetition as is called for by the musical score.

1090. No honors are paid by troops when on the march or in trenches, except that they may be called to attention, and no salute is rendered by troops marching in double time or at the trot or gallop.

1091. When armed bodies of troops, or unarmed bodies commanded by commissioned officers, pass each other, except during drills or exercises, they are called to attention, if not already at attention, and the commanders salute, the junior rendering the first salute.

1092. Before saluting an armed body, troops are always brought to attention.

1093. No salutes are rendered between unarmed bodies commanded by noncommissioned officers.

1094. If an officer passes a body of troops, except at drills or exercises, compliments are paid as follows:

If the officer is a superior officer of the commander of the troops, the troops are called to attention, if not already at attention, the commander salutes and the officer returns the salute. If the officer is not a superior officer of the commander of the troops, salutes are exchanged, the junior saluting first, and the troops are not called to attention.

1095. If an officer or body of troops entitled to salute passes in rear of troops at a halt, the troops are brought to attention but no salutes are rendered.

1096. The commander of a body of troops, if a commissioned officer, is saluted by all officers junior in rank and by all

enlisted men. The salute is returned by the commander only, who does not call his command to attention if it be not at attention. The commander only is saluted.

1097. All officers salute on meeting and in making or receiving official reports. Military courtesy requires the junior to salute first, but when the salute is introductory to a report made at a military ceremony or formation to the representative of a common superior—as, for example, to the adjutant, officer of the day, etc.—the officer making the report, whatever his rank, will salute first; when not otherwise prescribed in ceremonies, the officer to whom the report is made will acknowledge, by saluting, that he has received and understood the report. When under arms the salute is made with the saber if drawn; otherwise with the hand. A mounted officer dismounts before addressing a superior not mounted.

1098. On official occasions officers, when indoors and under arms, do not uncover, but salute with the saber if drawn; otherwise with the hand. If not under arms, they uncover and stand at attention, but do not salute except when making or receiving reports.

1099. An enlisted man not in ranks, whether in uniform or not, salutes all officers when within saluting distance; the salute is made when dismounted with the hand farthest from the officer; when mounted, with the right hand.

Officers are saluted whether in uniform or not.

1100. A noncommissioned officer or private in command of a detachment salutes with the hand. A noncommissioned staff officer armed with the saber, when in command of a detachment or out of ranks, salutes with the saber if drawn; otherwise with the hand.

1101. An enlisted man, if seated, rises on the approach of an officer, faces toward him, and salutes. If standing, he faces the officer for the same purpose. If the parties remain in the same place or on the same ground, such compliments need not be repeated. Soldiers actually at work do not cease work to salute an officer unless addressed by him; if addressed, they stand at attention and salute.

1102. An enlisted man, whether covered or uncovered, makes the prescribed salute before addressing an officer. When the interview is terminated he again salutes.

A mounted man dismounts before addressing an officer not mounted.

1103. All salutes in passing or approaching are begun first by the junior at six paces distance, or at six paces from the nearest point of passing; no salutes, except as otherwise prescribed, are made at greater distances than thirty paces.

1104. Indoors, an unarmed enlisted man uncovers and stands at attention upon the approach of an officer; he does not salute unless he addresses or is addressed by the officer. If armed, he salutes as heretofore prescribed without uncovering. Out of doors, if uncovered, he salutes.

1105. When an officer enters a room where there are soldiers the word *Attention* is given by some one who perceives him, when all rise and remain standing in the position of the soldier until the officer leaves the room or signifies his wishes. The same rule applies when an officer junior to the one entering is also in the room. Soldiers at meals do not rise.

1106. When an officer approaches a number of enlisted men out of doors and not in ranks the word *Attention* is given by some one who perceives him, when all stand at attention and all salute.

1107. Officers at all times acknowledge the courtesies of junior officers and enlisted men by returning their salutes in the manner prescribed in these regulations. When several officers are saluted, all who are entitled to the salute return it.

1108. Soldiers at all times and in all situations pay the same compliments to officers of the Army, Navy, Marine Corps, and volunteers and to officers of the organized militia in uniform as to officers of their own regiment, corps, or arm of service.

1109. Officers arriving at the headquarters of a military command, or at a military post, call upon the commander thereof as soon as practicable and register their names. If the visiting officer be senior to the commander, the former may send a card, in which case it becomes the duty of the commander to make the first call.

1110. Honors, courtesies, and ceremonies not referred to herein are found in Army Regulations and in the Manual of Guard Duty.



RETURN TO **CIRCULATION DEPARTMENT**
202 Main Library

LOAN PERIOD 1

2

3

HOME USE

4

5

6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS

1-month loans may be renewed by calling 642-3405

6-month loans may be recharged by bringing books to Circulation Desk

Renewals and recharges may be made 4 days prior to due date

DUE AS STAMPED BELOW

INTERLIBRARY LOAN

FEB 1 1 1983

UNIV. OF CALIF., BERK

LIBRARY USE ONLY

MAY 24 2000

CIRCULATION DEPT.

rec'd circ. MAR 16 1983

YB 49761



